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Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

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January, 1942—December, 1942

Inclusive

VIRGINIA MEDICAL MONTHLY

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VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

VOL. 69. January, 1942 NO. 1.

THE N.Y. ACADEMY OF MEDICINE
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WHOLE No. 1075.

RICHMOND, VA., JANUARY, 1942.

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Guest Editorial

Lipid Pneumonia

RECENTLY Cannon[1] has reviewed the literature on lipid pneumonia and Freiman, Engelberg and Merrit[2] have reported forty-seven cases from the Pathological Department of the Montefiore Hospital. During the fifteen years that have elapsed since Laughlen first drew attention to the condition, nearly two hundred cases have been recorded and the subject grows rapidly in interest and importance. Most of the cases have followed the use of liquid petrolatum, taken by mouth as a laxative, or through the nose and nasopharynx as an instillation or a spray. When we consider the large number of persons who daily use liquid petrolatum as a laxative or spray, and the almost universal habit of dropping oil into the nose of infants and children at the first evidence of the onset of a cold, the danger of these indiscriminate practices becomes almost alarming. Not only are they condoned by physicians but usually are advised by them. Therefore, it is essential that doctors understand the nature of the danger that is incurred and that they use reasonable care to minimize the danger.

Many observations have demonstrated that oil introduced into the nasopharynx of man or animals easily finds a way into the lungs. Small amounts of oil introduced occasionally do no harm unless there is disease of the lungs which prevents the oil from being discharged. Oil given by mouth may enter the lungs in large amounts when administered to debilitated, somnolent and comatose patients, to those with some nervous disorder which interferes with swallowing, and to infants. When oil reaches the lung, if it is irritating, a more or less severe inflammatory reaction occurs; to the bland oils there is little inflammatory reaction but always some edema and cellular infiltration of the alveolar walls. If the oil is retained within the lungs, the usual reaction to a foreign body begins and finally ends in extensive fibrosis. During the course of these reactions, frequently infection occurs to complicate the pathological changes and to modify the clinical manifestations.

As might be surmised the symptoms of lipid pneumonia are variable. In most cases the symptoms are mild and come on insidiously. Indeed, in many instances the disease is discovered unexpectedly in the course of a routine physical examination or in the roentgenogram. The evidence of extensive infiltrative disease of the lungs in the absence of pulmonary symptoms is a rather characteristic finding in lipid pneumonia. The clinical manifestations of the disease roughly may be grouped as follows: In most cases the patients have no symptoms and the condition is unsuspected until revealed at autopsy. In another large proportion of the cases the patients have no symptoms but routine physical examination or a roentgenogram reveals unexplained areas of consolidation in the lungs. A smaller number of cases have mild, vague symptoms, e. g., cough and a slight persisting fever, leading to an examination of the lungs which discloses one or more areas of consolidation usually of an extent not to have been anticipated from the mildness of the symptoms. There may be cases with recurring bouts of fever and evidence of areas of pulmonary consolidation resembling broncho-pneumonia. These symptoms are caused by recurring pulmonary infection. Or, there are cases with chronic cough, pain in the chest and often a little fever showing on examination massive consolidation of one or more lobes. The condition may simulate carcinoma as did the interesting case reported by Thomas and Rienhoff. The acute cases following the aspiration of a large amount of oil are easily recognized except perhaps in the unconscious or moribund patient. The clinical manifestations are those of aspiration pneumonia. Lipid pneumonia complicating another pulmonary disease may produce a puzzling clinical picture.

It seems altogether likely that most cases of lipid pneumonia are overlooked and that the disease will prove to be not an uncommon one when physicians become skilled in detecting it. Any unusual pulmonary lesion should arouse suspicion, particularly the demonstration of an unexpected lesion or of a lesion more extensive than the clinical symptoms had led one to anticipate, or a lesion of unusual form and distribution.

LOUIS HAMMAN.

1. Cannon, P. R., The Problem of Lipid Pneumonia. *J. A. M. A.*, 115, 2176, 1940.
2. Freiman, D. G., Engelberg, H., and Merrit, W. H. Oil Aspiration (Lipoid) Pneumonia in Adults. *Arch. Int. Med.*, 66, 11, 1940.

PUBLIC HEALTH IN VIRGINIA

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Public health has for many years been considered a definite obligation of government in this Commonwealth. That the happiness, prosperity and progress of this State are dependent upon a healthy people has long been recognized. Today, however, because of the present tragic world situation, the discharge of this obligation of the State to its citizens assumes a more imperative role. If anything other than misfortune can be ascribed to the current world crisis, it may well be the full realization of the importance of this activity to the safety of our country and its institutions. America's and Virginia's first problem today is defense, and our ultimate defense lies in the strength of our man power. The physical fitness not only of our armed forces, but also of our workers in defense industries, and even the health of our civilian population, will determine in a large measure the effectiveness of our war efforts.

Virginia has ranked well in the Nation in regard to the services which she has provided for the prevention of disease, prolongation of life and the promotion of the well-being of her citizens. Remarkable progress in these endeavors can be exemplified by a few facts.

The years 1915 to 1940 have witnessed a decline in death rates from pulmonary tuberculosis from 157.9 per 100,000 population to 52.5 in 1940. This disease, which in 1915 ranked first among the deaths of our people, has through these years been reduced to seventh place.

The following table illustrates similar reduction in other communicable diseases.

	1915		1940	
	Deaths	Rates*	Deaths	Rates*
Typhoid and Paratyphoid	514	23.4	27	1.0
Diphtheria	374	17.0	51	1.9
Malaria	153	7.0	--	--
All Puerpeural Causes	469	7.8†	246	4.5†

In 1920, 81 of every 1,000 babies born to parents of this State died before they reached their first birthday. This represented a tragic toll of 5,500 infant deaths. In 1940 the rate was 59 per 1,000 babies born, an annual saving of over 1,200 lives in this age group. Other accomplishments during this twenty-year period may be read in the complete elimination of smallpox as a cause of death, a reduction in the mortality of typhoid fever to less than one-fifth, of diphtheria to less than one-third, and of the diarrheal diseases to less than one-half of their rates for 1920.

In the control of the communicable diseases, it is necessary that there be collection, tabulation, and analysis of data concerning their incidence and prevalence in order that information may be available as a basis for recommendations of measures for their prevention. Investigations are made of outbreaks and unusual prevalence of these diseases to determine the source of infection in order that control measures may be promptly instituted as a necessary adjunct to the program. A consulting diagnostic service in communicable diseases is available to all physicians of the State upon request.

There has been a reduction of approximately 40 per cent in both the number of cases and deaths from typhoid and paratyphoid fever over the totals for 1939. This is the seventh consecutive year in which a reduction in the number of cases and deaths from these diseases has been recorded and is a new low level in the history of the diseases.

A new low was established for the year 1940 in the reported cases of diphtheria and resulting deaths, there being only 709 cases and 51 deaths.

The 22,974 cases and 690 deaths attributed to influenza during 1940, because of the lack of a reliable diagnostic criterion and the variability in the reporting of these and similar illnesses, are of doubtful value for comparative or prognostic purposes. The presence of a respiratory disease in epidemic proportion, clinically resembling influenza and subsequently proven by laboratory study, along the west coast of the United States in December, indicated the likelihood that an epidemic in Virginia and other states would follow. The epidemic was experienced in this State in January and February, 1941, and will be reflected in the morbidity figures for that calendar year.

In October, 1940, the first intensive pneumonia

*Rates per 100,000 population.
†Rates per 100,000 live births.

control preventive measures were inaugurated and the preliminary reports of the first eight months' work in this field show a total of 248 cases of lobar pneumonia rendered aid through the treatment by drugs and sera furnished to medically indigent individuals. In addition, 90 cases of bronchial pneumonia received treatment. For 208 of these cases, 1,252 laboratory examinations were performed. The reported results show that 224 of these patients recovered and only 24 died, giving a case fatality rate of 9.7 per cent. Previous experience with this disease has shown an expected case fatality rate of at least 25 per cent. There is need for an expansion and further application of modern control measures if we are to reduce further the deaths occurring from this disease.

Although during the past year there has been no outbreak of poliomyelitis or of cerebrospinal fever in epidemic proportions in the State, there was an unusual prevalence of poliomyelitis in several areas in the southwestern part of Virginia, and there was a slight increase in the prevalence and mortality of cerebrospinal fever represented by 73 cases and 32 deaths. Any increase in these diseases is important as an indication of the probability of an increasing virulence of the diseases due to the change in environmental conditions conducive to the spread and severity of these infections. These conditions have developed as a result of the large scale activities incident to the national defense program. Overcrowding and poor hygienic surroundings particularly in regard to sleeping quarters are definite factors in the spread of cerebrospinal fever. The lack of adequate hospital facilities for the effective isolation and treatment of patients in most areas will likewise increase the difficulty of controlling these and other acute infectious diseases.

A specific program for the control of syphilis, gonorrhea and other venereal infections has been carried on in Virginia since 1936. The endeavors in this field include educational activities for the physicians and the public, the treatment of cases by private physicians and of medically indigent individuals in public clinics, the tracing of sources of the infection and the follow up of infected individuals. Legislation passed by the last session of the General Assembly requiring premarital serological examinations has been made an integral part of the general program.

There are at present within the State 118 clinics operating in cooperation with and receiving assistance from the State Department of Health for the treatment of persons infected with these diseases. Drugs were distributed in the year 1940-1941 in the amount of 775,483 doses, which would render adequate treatment to approximately 18,000 individuals.

It may be noted that 44,113, or 83 per cent, of the total examinations made as a result of the pre-marital examination law were on individuals under 30 years of age—the group to whom the knowledge of the presence or absence of infection is most important. Moreover, since it is generally accepted that 50 per cent of all new cases of syphilis occur in the age group 21 to 30, the examination of these individuals is particularly valuable in efforts to control the disease. Without this legislation, many of the 1,357 individuals found infected in this age group would never have been aware of their infection, and therefore, would not be under treatment. It is of interest, also, to note that the infection rate among females of child-bearing age is approximately the same as the rate determined for that group in previous prevalence studies made in Virginia.

With the tremendous influx of population the problems involved in venereal disease control have necessitated the placing of six epidemiologists in district headquarters throughout the State in areas where defense work is most active.

An indication of the work being undertaken to reduce the incidence of venereal disease is seen in the number of records being handled under the premarital examination law, totaling 52,000 statements by physicians and approximately 65,000 laboratory reports, and under the selective service act, the handling of 80,000 selectees' reports. In fact, over 200,000 records are being handled per annum in the control and prevention of venereal disease alone.

In Virginia, tuberculosis ranks seventh as a cause of death, and yet, a critical analysis reveals that it is first for men between the ages of 25 and 35 and for women between the ages of 15 and 35 years. The total mortality in 1940 for the white race was 732 and for the Negro, 828. One-fourth of the population of Virginia is Negro, and it is alarming to note that 96 more deaths occurred in this group than in the remaining population. Many factors contribute to the high death rate in the Negro race. Some are probably uncontrollable, but there should be provided a minimum of at least one bed per

annual death. It is imperative that additional measures to control tuberculosis in the Negro race be put into effect immediately.

There are at present 770 beds for white patients and 265 beds for Negro patients at the State sanatoria. There are six tuberculosis sanatoria operated by municipalities providing a total bed capacity of 563. Through a State subsidy plan, 20 per cent of these beds are available to patients of the State irrespective of their place of residence. These institutional facilities for the care and treatment of tuberculosis should be increased. This increase should include facilities for the care of pulmonary tuberculosis, complicated by other diseases, tuberculosis of organs other than the lungs, and for patients in serious or advanced stages of tuberculosis. Also, there is need for compulsory isolation of careless or uncooperative cases of open tuberculosis in institutions other than prisons. Improvements under way at the State Farm will minimize this need, but it will by no means meet it adequately. Isolation should be provided for certain classes of patients in institutions less elaborate and costly than the sanatoria. They should effect humane isolation with more nearly normal living conditions and provide adequate free bed capacity.

The collapse therapy has developed to such an extent that it equals in importance the other major activities essential for the control of infection. Clinics or stations are established throughout the State, none being further distant than thirty miles from any patient where pneumothorax can be performed on suitable patients. During the past year, 666 patients were given approximately 24,000 treatments with no fatalities or untoward results.

The success of the mobile x-ray unit as a consultation service for general practitioners throughout rural areas of Virginia is indicated by the fact that there is a total of approximately 12,000 examinations made each year at the request of physicians. The necessity for these units is indicated by the fact that an average of between 500 and 600 patients per annum are recommended for sanatorium care.

A study of tuberculosis in pregnancy begun in 1938 carried on through the medium of x-ray examinations of 235 unselected patients attending prenatal clinics has emphasized the problem associated with the proper care of pregnant women who have tuberculosis. In this group, 29 cases of tuberculosis were found; 11, or 4.6 per cent, were in the active stages of the disease. This figure (4.6 per cent) is the highest tuberculosis rate of active cases found in any random group in the State. This study has shown that the incidence of tuberculosis in pregnancy is greater than has been realized. It is hoped as a result of this study that facilities will be made available to care for the women having tuberculosis during pregnancy and at time of delivery, and for as long a period afterwards as may be indicated.

The general welfare of our people is intimately concerned with the health of the mothers and children. Special programs have been developed in Virginia to promote their well-being and to prevent untimely death. These activities include all the usual media of public health education and special clinics to provide diagnostic and advisory service for mothers and children. This work is well developed in those counties of the State in which full-time local health departments operate. This type of service to be at all effective requires full-time health personnel for its administration and for this reason it is not yet available to all areas of the State. The establishment of local health departments in the areas now without this service is fundamental to the further extension of the maternal and child health program. There is an additional need for hospital facilities to provide safe management of complicated cases upon the recommendation of the patient's physician.

The licensing and supervision of maternity hospitals, delegated to the State Department of Health by the General Assembly of 1940 upon recommendations of the State Medical Society, should effect a more efficient hospital service for mothers and infants.

Activities concerning the health of the school child should be pursued more intensively. A more extensive and comprehensive program in cooperation with the State and local boards of education would be both desirable and productive.

Of the clinics maintained there are 142 Maternal and Child Health clinics in operation. The local practicing physicians participating in these clinics have performed excellent service. Indigent mothers and children made 81,810 visits to these clinics during the past year. Each clinic has been a practical demonstration to each local community of the advantages of adequate medical supervision for all classes of mothers and children.

Group instruction in maternal and infant care

was further developed and extended by public health nurses in connection with their work in the maternal and child health clinics. The investigation and study of each maternal death in the State, started in December, 1939, in cooperation with the medical profession, has been continued. There is definite evidence that obstetrical patients are receiving better care because of this study. Increased knowledge of the factors involved in preventable maternal deaths has made possible a more scientific approach in efforts to secure a still greater reduction of these deaths.

Practically one-fourth of all infant deaths in Virginia for the past ten years have been ascribed to prematurity. Facilities for the care of premature infants have been poorly developed, or entirely lacking in the great majority of even the larger hospitals throughout the State. Only a very limited number of hospitals have installed incubators for premature infants. A satisfactory and inexpensive incubator, the result of the construction of numerous models and several years of effort, was developed by the State Department of Health. The construction of fifteen of the Virginia incubators was planned, but only two were finally obtained due to inability to obtain materials on account of the defense program. A plan has been worked out whereby the State Department of Health incubator is to be made available on a loan basis, as soon as materials for construction can be obtained, to those hospitals developing the specialized nursing service. With the incubator loan proposition as an added attraction, it was possible to develop specialized training in the care of premature infants as a post-graduate course for nurses. Since an incubator is only a useful accessory in the proper nursing care of premature infants, the development of specialized nursing services for prematures in the hospitals of the State has been emphasized.

A model premature station and nurse-training center was established in a hospital at a central point. Intensive training in the nursing care of premature infants was offered to selected graduate nurses from various hospitals throughout the State. Eight representative hospitals each had a nurse receive the benefit of the two months' post-graduate course.

Through the Crippled Children's Bureau, an attempt is being made to locate and register all crippled children. At present there are 6,907 crippled children on the registry of the State Department of Health. The diagnosis and treatment of the medically indigent children who are crippled as a result of previous existing diseases and conditions are provided through orthopedic clinics. Aside from humane considerations, this endeavor, through the rehabilitation or minimizing of the crippling of many unfortunate children contributes in a large measure to the general well-being and health of the people, and in many instances will make the cripple an asset to his community rather than a liability.

Orthopedic clinics are held throughout the State for the purpose of making diagnosis and advising as to treatment and hospitalization. There is a need to increase orthopedic hospital facilities in order that surgical treatment may be rendered for certain types of indigent crippled children not now included in the service.

Children suffering from recent attacks of poliomyelitis are seen through an orthopedic consultant service in order that they may be placed under corrective treatment at the earliest possible moment and thus minimize the crippling after-effects.

For some time it has been believed that the incidence of rheumatic fever was comparatively high in the State of Virginia. Therefore, a study of this disease was started to determine its prevalence among children. Diagnostic services, hospitalization, convalescent care and complete follow up of indigent children suffering from rheumatic fever or heart disease was established. To date this program has been confined to the city of Richmond and adjacent counties. Of the 979 children examined, 56 revealed heart conditions suggestive of rheumatic heart disease. Thirty-six patients have been hospitalized during the most acute stages of their illness. Convalescent units of eight beds have been set up for the white children at the Crippled Children's Hospital and for Negro children at the Richmond Community Hospital.

The medical and dental profession are fully cognizant of the importance of mouth hygiene in the preservation of the health of the people. Virginia's program of mouth hygiene was inaugurated and sponsored by the dental profession of this State. The principal objective of the program is an educational one, actual dental operations being used to demonstrate the relationship and value of mouth hygiene to the general health of the individual. The cooperation of the county school boards by provid-

ing financial assistance to help defray the cost for indigent children has been of assistance in the maintenance of this program. Twenty dentists are employed to conduct clinics on this cooperative basis, in twenty-four counties for white children and in nine counties for Negro children throughout the State. As a result of these clinics, approximately 60,000 children are offered the opportunity of obtaining dental care each year.

Public health has recently been expanded in Virginia to include a new phase of health activity, namely, Industrial Hygiene. This new activity, confined to adults, is chiefly concerned with the health problems of the working population. The Virginia Manufacturers Association, the State Chamber of Commerce, and other groups manifest interest in the services of this bureau. The growth of the industrial life of Virginia during recent years and its rapid expansion due to the defense program made it essential that work in this field be augmented. Every means available should be used to conserve our industrial man power. Occupational and environmental conditions detrimental to health prevent maximum efficiency in the performance of work.

It is well established that many of the preventable diseases are more prevalent among the industrial population than among any other population group, some of these diseases being tuberculosis, pneumonia, venereal diseases, silicosis and many of the so-called common respiratory diseases.

In connection with the medical service maintained in Industrial Hygiene, a mobile x-ray unit using the new 35 mm. film for chest plates has been made available to industry. Under ideal conditions, over 500 films may be taken daily, and approximately 35,000 x-rays of industrial workers may be taken per annum.

The public health laboratories represent a most important adjunct to all but a few of the individual endeavors of a balanced health service. Public health laboratories are located in Richmond, Norton, Abingdon and Luray. These laboratories make bacteriologic and serologic tests without charges on specimens submitted by physicians of the State. These services are essential as an aid in the diagnosis of communicable diseases. In addition, bacteriological examination of water and milk samples and other specimens are made to determine their sanitary quality and safety.

The importance of environmental sanitation in the prevention of disease and the promotion of health has always been recognized by the State Department of Health and has been incorporated as an integral part of its general plan for the promotion of the health of the people. General supervision and control of the public water works and supplies as far as the sanitary and physical quality of the water affects public health, falls in the field of Sanitary Engineering. There is available to municipalities, institutions and individuals, technical assistance and advisory service in regard to sewerage systems, and disposal of sewage and industrial wastes.

In the protection of the health of the people, the supervision and control of the growing and marketing of shellfish is an essential service of the State Department of Health. The inauguration and supervision of a program for the control and elimination of the pest mosquito and other duties relative to engineering problems affecting the public have been developed as a part of the services now being rendered.

The subject of nutrition is receiving national attention as a defense measure. To stress the principles of nutrition and proper diet to the general public, Virginia is taking advantage of every opportunity to see that her citizens receive all available information concerning the right foods for vitality and health. A State-wide Nutrition Committee has been organized, as have local committees, all these volunteer agencies working in close cooperation with the State Department of Health. Through these committees, nutrition classes have been and are being formed to disseminate knowledge concerning the value of foods and the importance of diet to health.

However much has been and is being accomplished, the scope of the work is limited for it is only through the establishment and maintenance of full-time local health departments in every governmental jurisdiction of Virginia that the most efficient public health service can be rendered. The success achieved in the preservation of health and in the control and prevention of diseases is fundamentally based upon local health services. Experience has shown that the handicaps in the operation of clinical services are so great that the operation of these services is not justified unless administered as a part of the local health department. Forty-eight of the 100 counties in Virginia are served by local health departments. These local health agencies

operate in full cooperation with the State Department of Health as a definite branch of the respective local governing bodies. The administration and supervision of the full-time cooperative county health departments is the responsibility of the Bureau of Rural Health. The bureau aids in the development of the public health program in each local area, and renders technical advice and aid in matters of public health administration.

Fifty-two counties containing approximately one-third of the rural and semi-rural population of Virginia are without health facilities provided by local departments. Perhaps the outstanding health need at the present time in Virginia is the establishment of county or district health departments to serve the people of these areas.

All of the cities of the first class and a number of smaller cities and towns maintain their own health departments. These vary as to the adequacy of their personnel, facilities and programs. There is need of advisory service to facilitate standardization and coordination of the programs of the municipal health departments. Closer cooperation should be effected between the State Department of Health, including the county health departments, and the municipal health departments.

Coincident with the need for additional local health departments and for standardization of local health practices is the advisability of revision or modification of certain local health regulations, and in some instances of State-wide regulations to insure uniform and effective procedures. This includes regulations governing the sanitary quality and safety of milk and other foods as well as the sanitation of the establishments in which they are served.

In many respects the public health of today is far in advance of the period of the last national emergency. What is more important, however, is that much remains to be accomplished. Slow and unsatisfactory progress in some endeavors must be remedied or more productive methods employed. New problems occasioned by the defense activities in many areas of the State must be met. The gains which have been made do not in any sense fully compensate for the present increased need for the protection of the health of our defense and civilian population. The problems of public health have increased many fold within the period of the national preparedness program. All of our health forces, both governmental and lay, must be mobilized, strengthened and coordinated.

THE MANAGEMENT OF CHRONIC SUPPURATIVE PULMONARY DISEASE*

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Every lesion encountered in the trachea, bronchi, or parenchyma of the lungs may be associated with suppuration, but this discussion will be limited to chronic pulmonary infection not associated with foreign body, syphilis, tuberculosis, malignant or benign growths, extra-bronchial tumors, or the various fungus infections that occasionally invade the tracheobronchial tree. There is already too much confusion in classification of pulmonary suppuration and in procedures recommended in treatment without discussing various specific diseases which may result in secondary suppurative processes.

When specific pulmonary disease is encountered, treatment should be directed toward the primary lesion; with its removal, the secondary suppurative process usually subsides spontaneously. This is best illustrated in removal of a foreign body from a bronchus, followed by resolution of the infected area in the lung even when the foreign body with accompanying suppuration has been present for a number of years.

The greatest difficulty in evaluating efficacy of various procedures which have been utilized in management of pulmonary suppuration has resulted from lack of satisfactory classification of inflammatory processes in the lung, producing purulent secretion. Although it is improbable that any classification of chronic, pulmonary, suppurative diseases will be acceptable to all physicians, the following grouping has proved valuable to me:

1. Diffuse suppurative pneumonitis.
2. Abscess.

*Read before the annual meeting of the Medical Society of Virginia, at Virginia Beach, Va., October 6-8, 1941.

3. Bronchiectasis.
4. Partial inflammatory occlusion of a bronchus with intermittent retention of secretion.
5. Congenital or acquired cystic disease of the lung with infection.
6. Empyema with bronchial fistula.

CHRONIC, DIFFUSE, SUPPURATIVE PNEUMONITIS—As the name indicates, this is chronic diffuse infection in a lobe or portion of a lobe of a lung. If only part of a lobe is involved, the lesion is usually located in the posterior portion of one of the lower lobes. Symptoms may be similar and as severe as in abscess, but when infection is diffuse, indications for proper treatment may not be well defined. Sometimes stenosis of the bronchus communicating with the area of infection may be detectable, but at other times the bronchial lumen may appear normal in size.

frequently called metastatic abscess.

Aspiratory abscess is usually single and may involve any portion of either lung, but is seldom encountered in the middle lobe of the right lung. In the acute stage there may be an area of infiltration with a suggestion of central necrosis, which is determined by Roentgen examination. In this stage, administration of one of the chemotherapeutic agents may produce resolution of the area of infection. Development of chemotherapy may prove of increasing value in treating patients with chronic pulmonary suppuration. Difficulty in determining the causative organism makes treatment for these lesions unsatisfactory, and the fact that an organism obtained from the area of suppuration may grow in culture media is not sufficient to validate the assumption that it is the causative agent.

In the subacute and chronic stage when cavitation

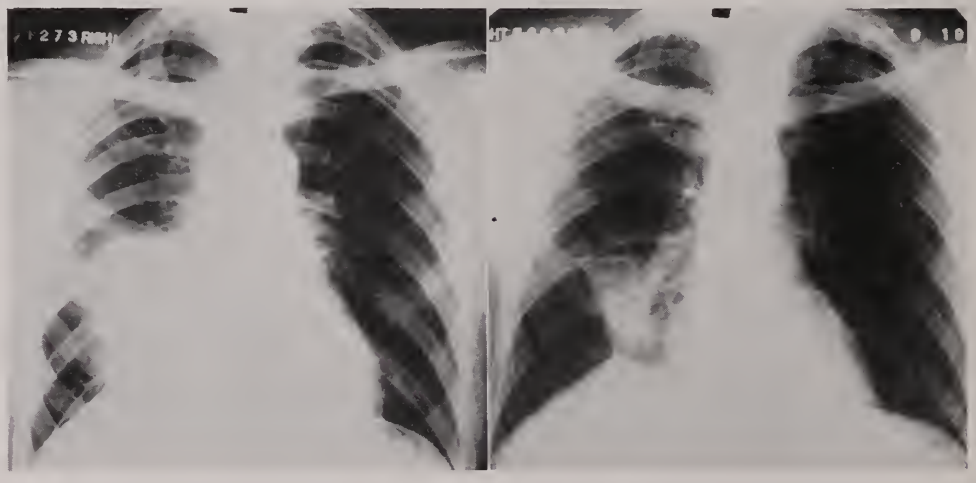

Fig. 1. A. Chronic, diffuse, suppurative pneumonitis following tonsillectomy under local anesthesia.

B. Residual fibrosis in lung fourteen months after bronchoscopic drainage of area of suppuration; patient clinically well.

In any case, effort should be made to promote drainage by enlarging the bronchus with forceps introduced through a bronchoscope. A few treatments with Roentgen rays may also prove beneficial. Improvement may be slow, but as long as it is progressive, treatment should be conservative (Fig. 1). External surgical drainage is not satisfactory, and excision of the infected area with cautery, or lobectomy are the only surgical procedures that can be expected to afford relief.

ABSCESS—Pulmonary abscess may result from aspiration of material into the tracheobronchial tree or it may begin as embolic infection from disease in another part of the body. This second type is

has occurred, treatment with drugs is seldom beneficial. Presence of Vincent's organisms in the sputum of many patients with pulmonary abscess has led to employment of arsphenamine and other arsenical preparations. I do not believe that these organisms are responsible for suppurative disease in the lungs or that arsenical drugs have any value in treatment of nonspecific pulmonary infection.

Aspiratory pulmonary abscess is usually associated with stenosis of a bronchus and probably begins as ulceration in that bronchus. An area of atelectasis follows, which soon becomes infected, and necrosis and emphysema produce cavitation. If the stricture in the bronchus can be identified and

dilated through a bronchoscope, recovery occurs in approximately 75 per cent of cases. Bronchoscopy is, therefore, the first operative procedure that should be employed in management of pulmonary abscess (Fig. 2).

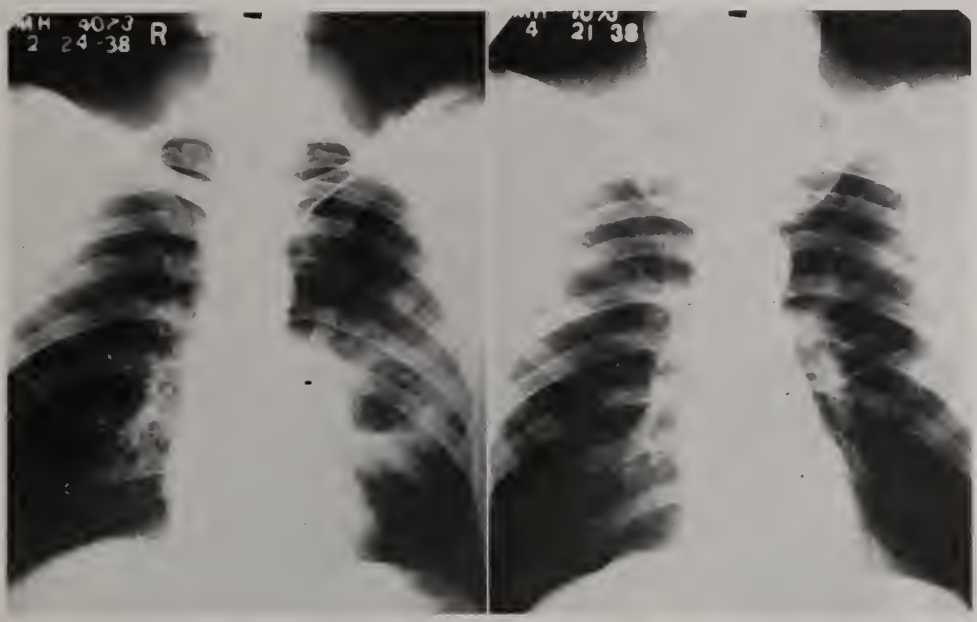

Fig. 2. A. Aspiratory pulmonary abscess, probably from dental infection; stricture identified in posterior division of left lower lobe bronchus at bronchoscopy. B. Roentgenogram, same patient, two months later; complete recovery following dilatation of bronchial stricture and aspiration of abscess at bronchoscopy.

If adequate drainage is not obtained at the first bronchoscopic examination, treatment by this method should be repeated in a week or ten days. Should this not produce satisfactory improvement, a third attempt may be indicated. If the third treatment is not effectual, external surgical drainage should be provided without further delay. In abscess in an upper lobe of the lung, drainage through a bronchoscope may be more difficult than when the lesion is in a lower lobe. If, however, a proximally illuminated bronchoscope is used and the patient is cooperative, the bronchial stricture can usually be identified and dilated satisfactorily.

Drainage of abscess of the lung by postural methods is seldom effective, and when a patient is acutely ill, it is unwise to attempt this type of treatment. Unless the bronchial stricture has first been divulsed, drainage by posture cannot be accomplished. When an abscess is located in an upper lobe, it would seem illogical to place the patient in the same posture that is used when an abscess is located in the lower lobe of the lung. However, the term postural drainage is usually interpreted to mean that the patient should kneel on the edge of a bed or chair with his hands on the floor, thus inverting his thorax. This posture might facilitate drainage from an area of infection in the lower lobe of the lung if the bronchi were not obstructed, but it is difficult to imagine that it would be effective in promoting drainage from an abscess in an upper lobe even when the bronchial lumina are of normal size.

Pneumothorax should not be employed in any type of non-tuberculous pulmonary disease except as a preliminary measure in the removal of a portion or all of a lung. Compression of a lung that is infected by organisms other than bacilli of tuberculosis invites development of empyema, and if bronchial stricture is present, drainage is further impaired.

Embolic or metastatic pulmonary abscess may be single or multiple and may involve one or more lobes of the lungs. Treatment is identical with that suggested for aspiratory abscess, but the outcome is less favorable than in the abscess that has resulted from aspiration of material into the bronchi (Fig 3).

BRONCHIECTASIS—Many conditions of the tracheobronchial tree, associated with cough and expectoration of mucus or pus or evidence of bronchial infection, are referred to as bronchiectasis. Although

bronchial dilatation may be present in most of the cases thus classified, severity of symptoms and response to therapy may vary markedly. Absolute classification of these lesions is not possible, but the following types are often observed:

(1) *Infection of the tracheobronchial tree associated with and secondary to infection in the nasal accessory sinuses*—In this condition cough and expectoration of mucoid or mucopurulent secretion are secondary to suppurative disease in the nasal accessory sinuses. Bronchoscopic examination reveals small amounts of mucogelatinous, non-odorous secretion throughout the tracheobronchial tree. Treatment of the primary source of infection is usually sufficient to relieve manifestation of disease in the lower air passages.

manifestations, oral administration of iodides and belladonna may be helpful in relieving bronchial spasm. Postural drainage is seldom advisable because dyspnea is intensified by increased physical exertion incident to change in posture. I have not observed beneficial results following instillation of iodized oil into the bronchi in patients with chronic pulmonary suppuration, and when the process is associated with emphysema and fibrosis, symptoms are frequently aggravated by this type of treatment. Autogenous or stock vaccine has often been used in treatment of this and other varieties of bronchiectasis, but benefit has rarely been obtained.

(3) *Hemorrhagic bronchiectasis or bronchial erosion with hemorrhage*—This condition results from an area of granulation tissue in the depths of a

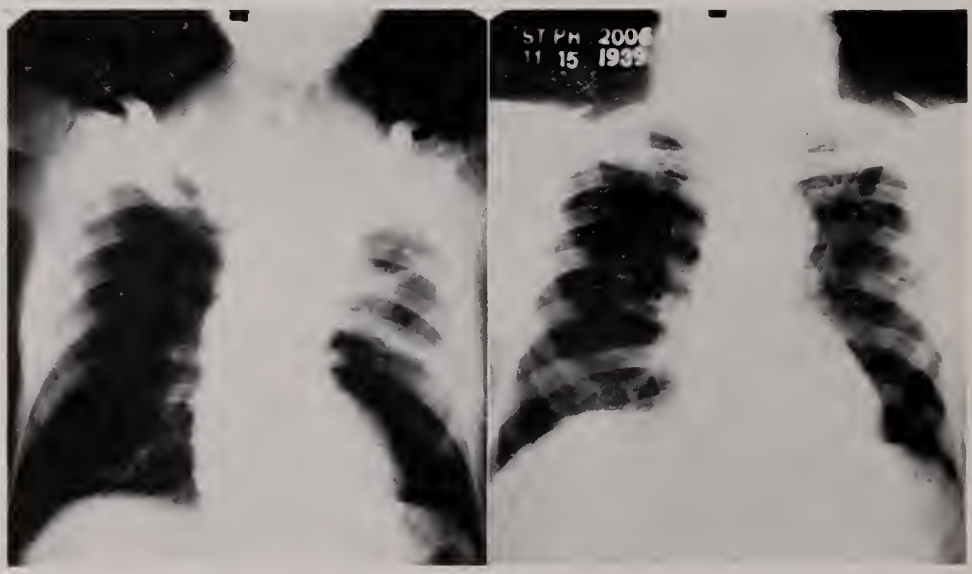

Fig. 3. A. Embolic pulmonary abscess following repair of inguinal hernia.

B. One month after bronchoscopic aspiration of abscess; no evidence of bronchial stricture at bronchoscopy.

(2) *Pulmonary fibrosis with purulent bronchitis*—Many patients who suffer from chronic asthmatic bronchitis, essential or secondary emphysema, or other types of respiratory disorder associated with pulmonary fibrosis may have varying degrees of purulent bronchitis. There may be episodes of fever, purulent sputum, and evidence of areas of bronchopneumonia. Although pulmonary fibrosis cannot be cured, occasional bronchoscopic aspiration of purulent secretion from the tracheobronchial tree followed by insufflation of 1 gram of powdered sulfanilamide into the bronchi may produce a beneficial effect. If the patient tends to have asthmatic

small bronchus.[2] A little pus may be present in the bronchus, but the usual manifestation is bleeding from the lung in a patient who has been well prior to hemorrhage. If bronchoscopic examination is made at the time that bleeding is active, the hemorrhagic area can be identified, and curettement of the bronchial wall is followed by permanent cessation of hemorrhage. This lesion is comparable to erosion of the nasal septum with nose-bleed.

(4) *True idiopathic bronchiectasis*—The most common type of bronchiectasis usually begins in early life following whooping cough or some other acute respiratory infection. Symptoms may be mild

or severe, depending upon the extent of the lesion, the size of the sacculations in the lung, and the degree of retention and stagnation of secretion. In mild cases cough may be annoying, but the amount of sputum is small and easily evacuated, with no odor or taste. General nutrition of the patient is unimpaired. Physical and roentgenoscopic examinations rarely reveal significant changes, but bronchoscopic study discloses pus in the lower lobes of both lungs without narrowing of the bronchial lumina. The mucous membrane may be fairly normal in appearance. Bronchograms following instillation of iodized or other opaque oil usually demonstrate dilatation of bronchi, but considerable infection may be present in the bronchi, as revealed by direct inspection through a bronchoscope, without significant change in outline of the bronchial tree.

In severe cases there is evidence of absorption of pus, with pallor, clubbing of the fingers, and extensive change in the lungs on physical and roentgenoscopic examination. A large amount of malodorous, foul-tasting sputum is produced. This type of bronchiectasis is not associated with reduction in the size of the bronchi and almost always begins in the lower lobes of both lungs. As the disease progresses, it may involve the middle lobe and eventually the lower portion of the upper lobes, especially on the left side. Infection of the nasal accessory sinuses is frequently an accompanying condition, but treatment directed to the nose and sinuses does not influence the infection in the bronchi. Probably the infection in the sinuses is the result rather than the cause of the pulmonary disease.

When bronchiectasis of this type is diagnosed in children, surgical removal of the lower lobes of both lungs may be indicated. In adults, removal of the infected lobes is not quite so satisfactory because of the greater risk of operation. If, however, the disease is severe and more conservative measures have not afforded relief, excision of the diseased portions of the lungs should be recommended. Compression of the lungs by thoracoplasty or pneumothorax is inadvisable.

Postural drainage may be helpful in providing periods for evacuation of pus from the lungs, obviating the necessity of coughing incessantly throughout the day. When postural drainage is employed, the periods of drainage should be placed before meals and before retiring at night. If the procedure is attempted after meals, forced cough may induce vomiting. Drainage by posture should not be continued if bleeding is incited by increased physical effort. Sometimes inhalation of steam for ten or fifteen minutes before postural drainage promotes expectoration of secretion. When systematic, faithful drainage by posture is observed, there may be reduction in the amount, odor, and foul taste of the sputum, and the patient's general condition is improved.

Frequent bronchoscopic aspiration of secretion from the tracheobronchial tree, with or without irrigation of the areas of infection, has been recommended as producing beneficial results. Although all patients who suffer from chronic pulmonary disease of non-tuberculous origin should have at least one bronchoscopic examination, I have not been impressed favorably with the effect of bronchoscopic aspiration alone in treatment of chronic bronchiectasis. During the past three years I have obtained much more satisfactory results from bronchoscopic aspiration of pus from the tracheobronchial tree followed by insufflation of powdered sulfanilamide, and I believe this method of treatment should be given a trial in all cases of bronchiectasis.

PARTIAL INFLAMMATORY OCCLUSION OF A BRONCHUS WITH INTERMITTENT RETENTION OF SECRETION—The posterior division of the bronchus to the lower lobe of each lung is a common site of inflammatory disease. When inflammation is located on the left side, evidence of infiltration that might be disclosed by roentgenoscopic examination may be obscured by the heart shadow, and bronchoscopy may be the only method for detecting the site of the disease. When a patient has recurring episodes of fever followed by expectoration of pus, partial bronchial stenosis should be suspected. One of my patients had had periods of fever followed by cough and expectoration of pus at intervals of one week to six months for forty years before the exact character of the lesion was determined by bronchoscopic examination.[3] Prickman and Moersch[1] have reported a group of these patients with allergic and infectious asthma. Dilatation of the narrowed bronchus provides adequate drainage and results in relief of symptoms.

CONGENITAL OR ACQUIRED CYSTIC DISEASE OF THE LUNGS WITH INFECTION—During the past decade cystic disease of the lung has been recognized with increasing frequency. Whether the cysts are congenital or acquired may be problematic in many

instances, but indications for treatment are the same in all patients. Infection of the cystic areas or repeated rupture of the cysts with pneumothorax are complications that may necessitate surgical intervention. It is possible that many patients who, seemingly, have bronchiectasis dating from early life may in reality have multiple small congenital cysts which have become infected. In such cases surgical excision of the involved portions of the lung may be required. When infection occurs in a solitary cyst, bronchoscopic drainage should be attempted before resorting to surgical drainage or excision.

EMPYEMA WITH BRONCHIAL FISTULA—When empyema occurs, delay in external drainage is often followed by rupture into a bronchus. After external drainage has been established and healing seems complete, symptoms may recur with fever and drainage of the area of infection through a bronchus. Several years may elapse between the original disease and its recurrence so that an independent process may be suspected. Bronchoscopic examination, with injection of radio-opaque oil into the bronchus from which pus is seen to exude, facilitates identification of the empyema cavity. External surgical drainage should then be instituted.

SUMMARY

1. A variety of suppurative processes may involve the tracheobronchial tree and must be differentiated before proper treatment can be administered.

2. A classification of chronic, suppurative, pulmonary processes is submitted.

3. Any patient with suppurative disease of the lung should have at least one bronchoscopic examination for accurate determination of the location and distribution of the area of infection.

4. When bronchial stricture is present, adequate drainage can often be provided by bronchoscopic methods with beneficial or curative result.

5. More accurate visualization of the small bronchial divisions can be accomplished by a proximally illuminated bronchoscope than by a distally illuminated one.

6. Bronchoscopic aspiration of the tracheobronchial tree followed by insufflation of powdered sulfanilamide has benefited patients with chronic bronchiectasis.

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DISCUSSION

DR. C. LYDON HARRELL, Norfolk: To me this is a most interesting subject. I think I have seen more than my share of suppurative disease of the lung. I would like to ask Dr. Vinson how he differentiates between aspiration abscess and embolic abscess.

I think that any patient with pulmonary abscess should be put absolutely to bed. It has been demonstrated that fifty per cent of them will recover spontaneously with just rest in bed. If spirochetes are present, arsenicals should be used; if other organisms are present, sulfanilamide or allied drugs should be used. I think every case of lung abscess should be given a reasonable chance to get well before other means are used. Bronchoscopy is very important, but I do not think it should be used alone.

A few years ago I reported a series of cases in which fifty per cent had been cured by artificial pneumothorax. If you can catch them in the beginning and put in just enough air to keep the lung from adhering and give them a chance to cough up the secretions, I think there is a good chance of healing. If adhesions have already formed, then pneumothorax is out of place. After the lung is adherent I think the open drainage is the proper thing to do.

In cases of bronchiectasis, surgery has been a little unfortunate in my hands. Of two that we operated upon, one died; the other was cured. I think lipiodol has its place in bronchiectasis. There are some few cases that are not amenable to surgery. Some do not want to be operated on, and some are not strong enough to be operated on. I believe lipiodol has its place. First, it is heavier than the sputum, and the sputum floats on top and can be coughed up. Second, it is soothing. Third, it seems to have some bactericidal effect.

DR. DEAN B. COLE, Richmond: Suppurative pulmonary disease is a very common condition in our experience. I wish to thank Dr. Vinson for his paper. We see a great many patients with this condition, and are convinced that no single treatment is suitable for all.

Regarding sinus disease, we find this a frequent and, I might say, usual complication of chronic suppurative pulmonary disease, especially bronchiectasis. Whether the sinuses or the chest is the primary source of infection becomes academic if the patient suffers from both conditions. In our experience it is desirable and often necessary to treat both conditions to obtain the best results.

Undoubtedly, allergy plays an important role in many of these patients, and infection may be either primary or

secondary. If and when allergy is present, this should be corrected when practical.

I doubt if empyema should ever be drained bronchoscopically. I also do not believe that every patient with bronchiectasis should be bronchoscoped, although, when indicated, bronchoscopy may be helpful. We also find chemotherapy useful in a fair number of these conditions.

Bronchiectasis may be thought of as a relapsing disease, but much can be done through proper treatment .

I am glad Dr. Vinson mentioned iodized oil. We find it helpful in both diagnosis and treatment.

Bronchiectasis and true cystic lung disease may be confused where cysts have become infected, but most patients with bronchiectasis have no cysts.

Putrid lung abscess is becoming more and more a surgical disease with us since Neuhoff devised a method for more accurate localization.

DR. WALTER L. NALLS, Richmond: I enjoyed Dr. Vinson's paper and the discussion very much. Dr. Vinson has covered a great deal of territory, although at the outset he rejected those cases associated with tuberculosis and the like.

The role of bronchoscopy in abscess of the lung has been firmly established. A number of patients with lung abscess are definitely benefited by bronchoscopy. If a stricture can be determined it should, of course, be dilated, but in many patients even when no stricture is demonstrable, drainage is often improved following bronchoscopy. We have thought that shrinking solutions instilled into the bronchus have been helpful and we have also used the sulfonamide drugs—both in solution and in the powdered form.

So far as bronchiectasis is concerned, the only cure of this disease is the surgical excision of the affected portion of the lung. Any other form of treatment given these patients is more or less palliative or symptomatic, and this includes the blowing in of drugs, such as the sulfonamides. As Dr. Harrell has expressed, I, too, believe that the instillation of iodized oil gives many of these cases some symptomatic improvement. Aside from its value as a therapeutic agent, iodized oil is indispensable diagnostically. X-ray films made following the intrabronchial instillation of this opaque medium give most accurate information as to the location of the disease, the lobes affected, the extent of the disease, etc. The bronchoscopic appearance is also helpful.

Dr. Vinson has emphasized the advantages of the proximal-lighted bronchoscope. I doubt very seriously that one can visualize the tracheobronchial tree a great deal better with this instrument than with the distal-lighted bronchoscope. I question also that one can see around the corner into the upper lobe bronchi better with the proximal than with the distal-lighted instrument.

DR. VINSON, closing the discussion: I shall first attempt to answer Dr. Harrell's question in relation to the differentiation between embolic and aspiratory abscess. In many instances when operative procedures have been done around the nose or throat and pulmonary abscess develops, it is difficult to determine whether it has resulted from aspiration of infected material into the bronchi or from infection which has been carried into the lung through the blood stream. When operative procedures under local anesthesia have been employed on infected areas remote from the respiratory tract where direct aspiration of material from the site of infection is impossible and pulmonary abscess develops, it is generally assumed that the abscess is the result of emboli that have found lodgment in the lung. In true aspiratory abscess the lesion probably begins as ulcerative bronchitis and the cavity results as much from obstructive emphysema as from actual disintegration of pulmonary tissue. In aspiratory abscess bronchial narrowing is almost always encountered, but in an abscess that has begun in the parenchyma of the lung and later ruptured into a bronchus, stenosis of the bronchial lumen may not be present. Another point of differentiation is that embolic abscesses frequently are multiple, whereas aspiratory abscess usually is single.

Of course, the distinction between abscess that results from aspiration and that which results from embolus is purely academic. The major clinical consideration is that aspiratory abscess responds more favorably to bronchoscopic aspiration. Rest, of course, is advisable in the treatment of pulmonary abscess during the febrile period. After the temperature becomes normal, it has always been my impression that better drainage is provided if the patient is reasonably active. I agree with Dr. Cole that induced pneumothorax should not be employed in the treatment of pulmonary suppurative lesions. Empyema may follow this procedure, in which case external surgical drainage is required.

I believe that every patient with pulmonary suppurative disease should have at least one bronchoscopic examination, for the reason that it is not possible by other means to distinguish between ordinary suppurative lesions and those resulting from tumor or foreign body. For bronchoscopic examination I prefer the proximally illuminated bronchoscope because the light is directed into the depths of the tracheobronchial tree, and much better visualization is thus obtained.

NEPHRECTOMY

With Comments on Diagnostic Procedures in Obscure Conditions*

T. JEFFERSON HUGHES, M.D.,
Roanoke, Virginia.

I am reporting this case to illustrate the importance of using the x-ray and cystoscope as a routine procedure in all cases of questionable diagnosis, even though there are no symptoms of kidney pathology.

The diagnosis in this case was accidentally made during a gastro-intestinal x-ray study.

The infection leading to nephrectomy often has its origin outside of the kidney and the patient is usually referred to the surgeon after a correct diagnosis has been made and preliminary treatment has been given. It is the rare and obscure condition, presenting no symptoms of kidney pathology, which may lead one into the pitfall of a wrong diagnosis.

Should renal calculi be the primary and the exciting factor of the infection, the x-ray will reveal the size, number, and location of the stones, as well as the extent of the destruction of the parenchyma of the kidney. The lungs should be carefully examined, including x-ray examination in all cases, particularly in suspected tuberculosis of the kidney, as this will often be a deciding factor as to the advisability and extent of operative procedure.

Tuberculosis of the kidney is probably the most frequent condition necessitating nephrectomy. The kidney involvement is generally considered to be secondary to tuberculosis in some other part of the body, most frequently of the respiratory system. The tubercle bacilli are deposited in the kidney from the blood stream and are most frequently picked up from the lymph nodes in the lungs. It is, I believe, an established fact that the presence of tubercle bacilli in the urine indicates the existence of tuberculosis in one or both kidneys. Both kidneys may have received the bacilli in the beginning but one may have thrown off the infection while the other succumbs, hence the frequent clinical picture of unilateral involvement. Bilateral infection is demonstrable in about 50 per cent of cases.

The existence of tuberculosis of the kidney is claimed by Christopher[3] to be about 10 per cent of all cases dying of tuberculosis and 1 per cent of all autopsies.

In spite of the fact that the condition of the kidney is secondary, the primary focus is not always demonstrable.

The question of whether or not nephrectomy is indicated in the early stages of unilateral tuberculosis is not universally conceded and the decision is often influenced by the physical condition of the patient and his reaction to thorough treatment under the same routine procedures that are employed in tuberculosis in any other part of the body. I believe, however, that in bilateral involvement, where one kidney is far advanced and the other only slightly infected and proven to have good function, the more extensively infected kidney should be removed, with the hope of improving the remaining kidney through a general improvement of the health of the patient.

Another, and probably the next most frequent condition leading to nephrectomy is renal calculi. Large and irregular stones may be very difficult or impossible to remove, or there may be a number of small stones situated in the calices, the removal of which would so seriously destroy or impair the parenchyma of the kidney that the situation might be dealt with best by nephrectomy. If the presence of the stones has incited infection to the extent of seriously damaging the cortex of the kidney, nephrectomy should be done, regardless of the size of the stones.

Not infrequently both tuberculosis and calculi are found in the same kidney, as is illustrated in my case report.

CASE REPORT

White female, age thirty, was admitted to the Shenandoah Hospital, April 16, 1940, complaining of a weak, nervous, run-down condition. Her appearance was that of a poorly nourished, emaciated individual, with lack of appetite and a history of digestive disturbances over a long period of time.

The blood picture was as follows: 3,130,000 red blood corpuscles, 5,670 leucocytes, 65 per cent hemoglobin, .92 color index, 64 polys, 35 lymphs, 52 segs, 8 stabs, 1 eosn, and 3 monos. The urological report showed slight trace of albumin, sugar negative, acetone negative, few pus cells, no blood, no casts, few bacteria. Cystoscopic examination revealed bladder wall normal, right ureter closed (un-

*Read before Staff Meeting at Shenandoah Hospital, November 26, 1940, and illustrated by moving pictures.

able to introduce catheter more than one-half inch), left ureter admitted catheter without obstruction, from which urine flowed normally, and was microscopically negative. Kidney function test revealed a normally functioning left kidney. X-ray report: "Pyo-nephrosis with stones in right kidney." Chest examination revealed evidence of arrested tuberculosis in the left lung. Microscopic examination of sputum was negative for tuberculosis. Heart examination was essentially negative, except for weakness.

The patient was kept in the hospital under supportive treatment and nutritive diet three weeks before nephrectomy was performed. Notwithstanding the presence of two large irregular stones and the destruction of most of the parenchyma of the kidney, she entered the hospital with no symptoms referable to the kidney. Auto-nephrectomy had occurred sometime prior to her coming under our observation.

OPERATION.—Through a lumbar incision the kidney was easily exposed, due to thin, relaxed muscles and, in spite of numerous adhesions, it was delivered into the incision with little difficulty without having to sever any muscle fibers. After injecting about ten drops of carbolic acid into the ureter, the pedicle was clamped by two forceps and severed between the forceps by an electric cautery, and ligated in two places with No. 2 catgut. The incision was closed without drainage. Healing was by first intention, and the patient left the hospital on the fourteenth postoperative day.

SUMMARY

Renal tuberculosis is secondary to tuberculosis in other parts of the body, most frequently of pulmonary origin. X-ray of lungs and kidneys should always be made. Auto-nephrectomy in the case reported, with normal urinary findings, would have led to an erroneous diagnosis without x-ray.

The bacilli of tuberculosis are deposited in the kidney through the blood stream, frequently from the respiratory system. Renal tuberculosis rarely, if ever, ascends from the lower urinary tract.

At least 50 per cent of renal tuberculosis is bilateral when diagnosed, although a much larger per cent is probably bilateral in the early stages of the infection.

The treatment of renal tuberculosis is both medical and surgical. The patient's resistance should be built up by prolonged sanitarium care before surgery is undertaken.

Drainage should not be employed after the removal of a tubercular kidney, if one is reasonably sure that the incision is not infected, since in these cases a fistulous tract is apt to follow, which is difficult to heal.

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Shenandoah Life Building.

UTERINE CONTRACTIONS IN LABOR

EFFECT OF ANALGESIC DRUGS

WILLIAM BICKERS, M.D.,
Richmond, Virginia.

The last decade has seen the almost universal acceptance of certain amnesic and analgesic drugs for the relief of pain in labor. Their effect upon uterine contractions has been the subject of much debate. It would seem that a study which throws some light on these drugs and their effect on the expulsive forces of labor would be timely.

This report is concerned with a study of morphine, hyoscine, sodium amytal, nembutal, and ether upon the contractions of labor. These drugs were selected because of their general use as amnesic and analgesic agents.

TECHNICAL PROCEDURE

The patients selected for this study were among those under my care at the Evangeline Booth Hos-

pital in Richmond, Virginia. They came to the hospital some weeks in advance of their expected confinement; thus it was possible to gain their confidence, so that after explaining the nature of the experimental procedure, their cooperation was obtained without difficulty. No intra-partum or puerperal complication has arisen which could be attributed to the experiment. All of the patients were primiparae. Only those were used for this study who presented no obstetrical complication and in whom no complication was anticipated.

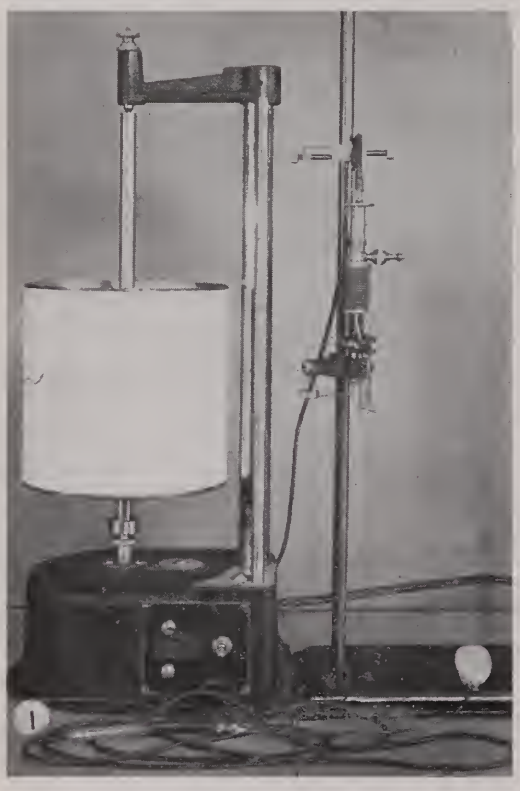


Fig. 1.—A small condom balloon attached to a heavy woven catheter and connected by way of a rubber tube to the mechanical ink recorder. The ink recorder is so arranged that its writing point records the tracings of uterine contractions on the kymograph.

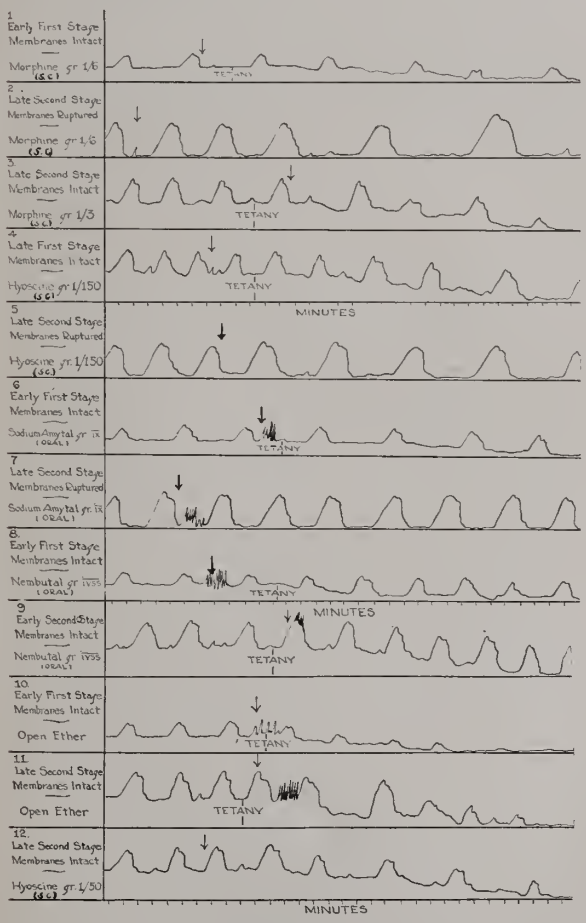
A small condom balloon attached to a long, heavy, woven catheter was inserted into the uterus between the membranes and the uterine wall. With the aid of a uterine dressing forceps it was possible to accomplish this in many cases without rupturing the membranes. The balloon and catheter were inserted early in labor before the presenting part became fixed in the pelvis. It was passed high up into the fundus, well beyond the lower uterine segment. The opposite end of the catheter was connected by way of a rubber tube to the mechanical ink recorder. The balloon, catheter, and tube were previously sterilized. The system was then filled with sterile water and the pressure raised to about 80 mm. of mercury. The mechanical recorder was so mounted that its writing point recorded the uterine contractions upon the revolving kymograph equipped with a "timer". The balloon and catheter remained in the uterus until after delivery of the fetus and were either expelled with the fetus or with the placenta.

Effect of Morphine Sulfate

The effect of morphine sulfate has been observed and recorded on four cases. Similar tracings followed the administration of the drug in all of the four. The effect of this drug was first recorded on a young primipara in the early first stage of labor. Labor had begun spontaneously two hours before the tracing was taken. The contractions were characteristic of those usually seen at this stage of labor. They occurred at intervals of about six minutes and had a relatively low amplitude superimposed on a moderate degree of tetany. Morphine sulfate, gr. 1/6 was given subcutaneously at the point indicated by the arrow. After twenty minutes it may be seen from the tracing (No. 1) that there is a slow but steady drop in the base line. This indicates the relaxing effect of morphine upon uterine tone. There is little effect upon the amplitude of each contraction. The interval between contractions is lengthened to about eight minutes. The second tracing (No. 2) was taken on another patient during the second stage after spontaneous rupture of the membranes. The contractions of this stage after rupture of the membranes are quite different from those seen in the early first stage. Rupture of the membranes as previously reported diminishes tone and results in a great increase in the amplitude of each contraction. Morphine sulfate, gr. 1/6 was given subcutaneously at the point indicated. After thirteen minutes there was some lengthening of the interval between contractions, but no marked effect upon the amplitude of each contraction. In fact, it is possible that the expulsive efficiency may actually be enhanced by the somewhat prolonged interval of rest between contractions. This cannot be proven, however.

In order to demonstrate the effect of a larger dose or morphine upon the uterus in labor another case was selected for study. The contractions were those of a primapara in the early second stage with the

membranes still intact. At this stage with intact membranes the uterus is normally very tetanic with contractions occurring at frequent intervals. Morphine sulfate, gr. 1/3 was injected subcutaneously at the point indicated. After eight minutes it can be seen on the tracing (No. 3) that the contractions begin to drop towards the base line. Uterine tonus was very promptly relaxed, but not completely abolished. The amplitude of each contraction became progressively lower until the expulsive efficiency was greatly reduced.



It may be concluded that morphine sulfate in small doses slightly relaxes the uterine tonus, prolongs the interval between contractions, and has little effect on the amplitude of each contraction. Larger doses abolish all uterine motility. The relaxation of uterine tonus by small doses of morphine probably increases the expulsive efficiency of the uterus. The myometrium being relaxed between contractions has a better chance to recover during its resting phase. Certainly the muscle fibres should, under these conditions, have less tendency to fatigue.

Effect of Hyoscine

Hyoscine is widely used for its amnesic effect during labor. Often used clinically in combination with morphine or the barbiturates, it was obviously better for the purpose of this investigation to study the effect of the drug acting alone. Three patients were selected for study of this drug during labor. In all of them the balloon was introduced early in labor and it was expelled after completion of the second stage. The most frequently used dose in actual practice is 1/150 gr. and so this was used on these patients. Since the effect of the drug was the same in all three cases, the tracing is shown on only one of them. Here the first tracing was taken ten hours after the onset of spontaneous labor. Contractions were occurring every three minutes and the cervix was three-fingers dilated (No. 4). It will be noted that the contractions are typical of late first stage as full dilatation of the cervix is approached. The contractions have a moderately high amplitude superimposed on a hypertonic uterus. The tone becomes progressively greater during labor until rupture of the membranes. This will soon be reported. Hyoscine, gr. 1/150 was given subcutaneously at the point indicated by the arrow. No alteration in the nature of the contractions themselves is noted, but the interval is increased and the uterine tone diminished. Another tracing (No. 5) shows the effect of hyoscine upon uterine contractions during the late second stage after spontaneous rupture of the membranes. The contractions in this stage have a much higher amplitude, each returns to a lower base line as a result of rupture of the membranes, and hyoscine seems to have no effect except perhaps to lengthen slightly the interval between contractions. This is not sufficiently marked, however, to be noteworthy. It is seen that the effect of hyoscine is similar to that of morphine, diminishing the amplitude and the tonus of the uterus.

It is possible practically to abolish uterine contractions with large doses of hyoscine. Note the almost complete absence of contractions after 1/50 gr. of hyoscine as shown in the tracing (No. 12) which was taken on another patient in the late first stage. Even this large dose does not seem to alter the uterine tonus, however, because the contractions do not return to the base line.

Effect of Sodium Amytal

One of the most popular of the barbiturates is sodium amytal. For the purpose of this sodium

amytal, gr. ix orally was given at the point on the tracings noted with an arrow. Three patients have been studied during labor with this drug. The effects upon uterine contractions were identical in all three. The first tracing (No. 6) was taken during the early first stage two hours after the onset of spontaneous labor. The low amplitude, mildly tetanic, long interval contractions are typical of this stage. The tracing was allowed to run for one hour after administering the drug, but no marked effect upon the contractions could be noted except slight diminution of tonus. The amplitude of the contractractions remained about the same. After twenty minutes, the relaxing effect becomes apparent as the contractions gradually descended to a slightly lower base line. This indicates that the drug diminishes uterine tonus. This fact assumes more importance when it is recalled that the normal sequence of events is for the uterus to become more tonic as the end of the first stage is approached with membranes intact. This drop in base line was noticeable in all cases and, therefore, I think we are justified in saying that sodium amytal diminishes the tonus of the intra-partum uterus. No effect upon the amplitude or the interval can be seen on the tracing.

Another tracing (No. 7) shows the effect of sodium amytal in the late second stage after spontaneous rupture of the membranes. No effect upon the amplitude or interval is seen. Uterine tonus has been diminished by rupture of the membranes.

It may be concluded that sodium amytal in the dose described has no effect upon the contractions themselves, but does induce relaxation between contractions.

Effect of Nembutal

Three cases have been studied during labor to determine the effect of nembutal upon uterine contractions in labor. Nembutal, gr. ivss was employed, as this is the most frequently used clinical dose. The arrow marks the point where the drug was given orally. The first tracing (No. 8) was taken four hours after the onset of spontaneous labor at term. The cervix was two-fingers dilated. The contractions were typical of the early first stage. They had a low amplitude, moderate tonus, and occurred every five minutes. About fifteen minutes after the drug was given it can be seen from the tracing that there began a drop in the base line to which each contraction returned. The uterus began to relax well between each contraction. This permits more complete rest between each contraction. The second tracing (No. 9) was taken on the same patient five hours later when the cervix was just fully dilated. The membranes were still intact. Note the marked tonus upon which each contraction is superimposed. Ten minutes after the drug was given the tonus began to diminish as indicated by the falling base line. Fifteen minutes after the drug was given the tonus has been practically abolished and the relative amplitude of each contraction is increased as a result of relaxation between contractions. There is no effect upon the interval between contractions.

It may be concluded that nembutal in amnesic doses does not interfere with the frequency of contractions; it releases the tone and by increasing the relative amplitude of the contractions, improves the expulsive efficiency of each contraction.

Effect of Ether

The effect of open cone drop ether has been studied on two patients. The results were similar in the two cases and so only one is shown in the tracings. The first tracing was taken two hours after the onset of labor while contractions were occurring every four minutes. Ether was dropped on the open cone at the rate of one drop every second. It may be seen from the tracing (No. 10) that the first effect of ether was to abolish tonus. The contractions first dropped to a lower base line and then the amplitude of each became progressively smaller until all uterine motility was abolished. After ten minutes of ether administration it was discontinued. Thirty minutes were required after stopping the ether for the contractions to recur to the point where they could be recorded. Twelve hours after this first tracing a second one was recorded (No. 11) during the late second stage when the membranes were intact. The contractions were typical of those in the late second stage with ruptured membranes. The contractions had a high amplitude, and there was hypertonus. The first effect of ether is to abolish tetany and then the contractions, until all uterine motility is abolished at the end of ten minutes.

Conclusions

1. The extra-ovular, high fundal, intra-uterine balloon connected through a closed water system to a mechanical ink recorder has been used to study the effects of certain drugs upon uterine contractions during labor.

2. Morphine in small doses, gr. 1/6, has no effect upon the amplitude, slightly prolongs the interval, and diminishes tonus. Larger doses, gr. 1/3, may abolish uterine motility.

3. Hyoscine in small doses, gr. 1/150, has no effect upon the amplitude, slightly prolongs the interval, and diminishes the tonus. Larger doses, gr. 1/50, may abolish uterine motility.

4. Sodium amytal in amnesic doses, gr. ix, has no effect upon the amplitude, does not prolong the interval, diminishes tonus.

5. Nembutal in amnesic doses, gr. ivss, has no effect upon the amplitude, does not prolong the interval, diminishes tonus.

6. Open drop ether first abolishes tonus and then the contractions. Thirty minutes are required after ether is discontinued for the uterus to regain its motility.

7. Amnesic and analgesic drugs diminish uterine tonus, thus permitting more complete relaxation of the uterus between contractions. This effect should increase uterine muscle efficiency by delaying or preventing fatigue.

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A HORMONOLOGIC CONSIDERATION OF FUNCTIONAL DYSMENORRHEA.

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The subject of a voluminous literature presenting diverse and equivocal opinions, dysmenorrhea remains today one of the most perplexing problems in gynecology. The explanation of menstrual pain may be sought, perhaps, in the physiological changes experienced by the woman in the childbearing period as preparation for possible pregnancy, these cyclic alterations resulting in pelvic discomfort of varying degree. Unfortunately, the clinical consideration of the subject of dysmenorrhea from a hormonologic aspect is rendered difficut by the fact that subjective symptomatology is colored by the psychic and emotional status of the patient which is commonly altered during the menstrual flow.

The definition of the term "dysmenorrhea" is difficult. The general usage of the word denotes in a limited sense the exaggeration of pelvic discomfort during menstruation to a degree sufficient to interfere with the patient's normal mode of living. Dysmenorrhea may be attributed to organic or functional causes. The organic type is described generally as "secondary" or "acquired" dysmenorrhea, as opposed to the form ascribable to uterine changes accompanying menstrual activity and termed variously as "intrinsic", "primary", "essential", "idiopathic" or "functional" dysmenorrhea. In that connection, there is, strictly speaking, no primary dysmenorrhea as functional dysmenorrhea develops commonly several years after menarche. Furthermore, the majority of women experience minor discomfort during menses, the term "menorrhalgia" having been proposed to describe the minor menstrual molimina, but only a few note severe pain.

In the following paragraphs, the discussion will be limited to the consideration of functional dysmenorrhea, with especial reference to the hormonologic influences.

INCIDENCE

Considerable variation in the incidence of dysmenorrhea must appear necessarily inasmuch as it is not a clinical entity but a symptom subject to wide interpretation among individual women. Stone[1] estimates that 35 per cent of adult women experiences varying grades of dysmenorrhea, chief of which is functional dysmenorrhea. From a group of 840 women students entering the University of Michigan, Bell and Parsons[2] ascertained that 100 (12 per cent) complained of severe menstrual pain. Cunningham[3] completed a similar survey on 14,268 female students of the University of California, finding that, whereas approximately 50 per cent of the group noted menstrual discomfort, only one in six reported severe pain.

Further studies concerning the incidence of dysmenorrhea disclose equally varied conclusions. Quoting the observations of M. Hodge on 974 apparently healthy girls, Novak[4] reported that 68.8 per

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cent had no menstrual pain, whereas the remaining 31.2 per cent experienced varying degrees of dysmenorrhea which, in 5.3 per cent of the group, was sufficiently severe to prompt rest in bed. In an analysis of 4,500 consecutive patients, Emge[5] noted a strikingly low incidence of dysmenorrhea, finding that 130 or 2.8 per cent complained of functional dysmenorrhea. On the other hand, Lakeman[6] found that 327, or 89.6 per cent, of 365 industrial workers suffered menstrual pain. Conclusions concerning this strikingly high incidence of dysmenorrhea are not permitted in view of the fact that industrial workers might seize every opportunity to absent themselves from work or that this group might be influenced unfavorably by the less intelligent presumption that menstruating women are semi-invalids.

In his monograph on dysmenorrhea, Davis[7] further emphasized the unreliability of statistical data concerning the incidence of dysmenorrhea. He estimates that 1 to 5 per cent of all young women are incapacitated for one or more days during each episode of uterine bleeding. From studies of 302 presumably healthy girls throughout four years in college, Miller[8] reported that 48 per cent experienced some menstrual pain. Among Irish girls, Browne[9] stated that 65 per cent have dysmenorrhea in some form, the group including 31 per cent of healthy school girls, 42 per cent of outdoor girls, and an even greater percentage of girls engaged at manual labor. It would appear, therefore, that possibly 50 per cent or less[10] of healthy women experience dysmenorrhea of varying degree and that possibly 1 to 5 per cent is forced to retire during particularly severe bouts of menstrual pain.

THEORIES CONCERNING THE MECHANISM OF DYSMENORRHEA

The underlying cause of dysmenorrhea has been attributed generally to the operation of one or both factors of a two-fold mechanism: (1) disordered or spasmodic contractility of the uterine musculature; and (2) alterations in the molecular disintegration of the endometrium during the menstrual phase. The etiologic factors producing the disturbances of uterine motility or endometrial fragmentation remain obscure. A brief review of the diverse facts and theories propounded to explain the altered uterine state resulting in dysmenorrhea seems warranted prior to the discussion of the respective roles of the various principles of the endocrine glands.

DYSMENORRHEA DUE TO DISORDERED UTERINE CONTRACTILITY: This considers diverse alterations in uterine mobility resulting from various etiologic factors: (1) disordered contractility due to uterine hypoplasia; (2) increase in the frequency and amplitude of uterine contractions (3) uterine hypercontractility with resultant ischemic pain; and (4) lowered pain threshold permitting normal contractions to reach conscious levels.

In 1903, Schultz[11] and later Schröder[12] stated that hypoplasia of the uterus is the chief cause of uterine cramps. It has been stated generally that the hypoplastic uterus contains an undue proportion of connective tissue with resultant loss of elasticity, consequent interference with the vascular channels manifested by venous distention and retarded circulation and irregular uterine contractility. Pertinent clinical observations do not permit correlation with the theory of uterine hypoplasia: (1) the greater the degree of uterine hypoplasia, the greater the likelihood that the patient will not bleed. Uterine hypoplasia can be accepted commonly as an indication of ovarian failure with resultant irregularities of uterine bleeding. (2) The majority of women manifesting significant uterine hypoplasia commonly experiences painless bleeding from estrogenic endomentria whereas dysmenorrhea is associated usually with bleeding from progestational endometria. The non-existence of dysmenorrhea during the early episodes of uterine bleeding following menarche may indicate anovulatory responses, i. e., bleeding associated with estrogenic endometria. (3) Repeated clinical observations indicate that many women with juvenile or poorly developed sexual organs do not have dysmenorrhea and that many dysmenorrheic patients do not manifest uterine hyploplasia.

In 1927, Schroeder[13] noted that the uterine contractions in dysmenorrheic patients are more rapid than in normally menstruating women. Studying the relationship of pain to the character of the uterine contractions in the immediate post-partum period, Adair and Davis[14] found that the difference between painful and painless contractions was in frequency and amplitude, not in type. Kolischer[15] and Moir[16] observed in a few cases of dysmenorrhea that the uterine contractions were more forceful. Cannon[17] states that the characteristic dysmenorrheic pain, which most theories accept as being due to exaggerated muscular contractions, is essentially spasmodic or tetanic. Assuming that tetanic contractions are

evoked by a strongly muscular uterus, multiparous women should experience excessive cramping whereas primiparous women should note less severe grades of menstrual pain, a point which is not substantiated by clinical experience. Furthermore, spasmodic contractions of the uterine musculature should provoke violent emissions of blood and endometrial tissue, an assumption which cannot be confirmed clinically.

Moir[16] concluded that dysmenorrhea results from uterine ischemia due to hypercontractility, a view that Wilson and Kurzrok[18] could not accept. By means of an intrauterine balloon, they recorded the uterine contractions of one patient during severe attacks of dysmenorrhea. It was found that the intrauterine pressure during the height of an attack remained well below the systolic blood pressure (120 mm. mercury), which, in their opinion, refuted the hypothesis that uterine ischemia could have existed. Furthermore, they noted that the pressure within the balloon during some contractions exceeded the systolic blood pressure but no pain resulted. This method does not provide adequate physiologic data inasmuch as the intrauterine balloon represents a foreign body and provokes characteristic alterations in uterine contractility dependent on the nature of the balloon, the degree of distensibility, and the irritability of the uterus at the time of introduction of the balloon. Furthermore, Moir's theory is not entirely disproved inasmuch as local ischemia may exist at diverse points without altering the state of the uterus as a whole. Indeed, the continuation of the vascular phenomena producing the premenstrual ischemia and the subsequent objective evidence of menstruation may well continue throughout the flow.

Inasmuch as Phelps[19] and others believe that the motility of the human non-pregnant uterus reaches maximum just prior to the onset of menstruation and during the first few days of the menstrual flow, Phelps states that it is generally agreed that uterine contractions are the immediate cause of dysmenorrheic episodes, cautioning, however, that satisfactory evidence of the occurrence of abnormal contractions in dysmenorrheic women has not been observed. Furthermore, Kurzrok, Wiesbader, Mulinos and Watson[20] emphasize that a uterine contraction is not always simultaneous with the subjective sensation of a cramp.

Wilson and Kurzrok[18, 21] believe functional dysmenorrhea to be ascribable to a state wherein normal uterine contractions during the phase of maximum amplitude reach conscious levels, but they do not offer an explanation for the reduction of the pain threshold to a degree sufficient to account for pain perception. Alterations in individual sensitivity and responsiveness to painful stimuli may be induced by several factors: economic stress; lowered sense of well being attributable to poor constitutional health resulting from acute and chronic debilitating states, foci of infection, anemia, vitamin deficiencies and inanition; inadequate maintenance of general body metabolism by insufficient exercise; pelvic congestion ascribable to diverse organic pathology and constipated states; insufficient sexual gratification; and anxiety states of various grades and causes.

The theory that dysmenorrhea is ascribable to disordered or spasmodic uterine contractility cannot be accepted until ample clinical evidence is submitted that the uterine motility of normal women pursues a cyclic pattern and that significant alterations of uterine motility occur in dysmenorrheic women.

DYSMENORRHEA DUE TO ALTERED ENDOMETRIAL FRAGMENTATION: This theory relates the faulty endometrial separation or disintegration to diverse factors capable of producing menstrual pain: (1) abnormal detachment of the endometrial fragments; (2) altered uterine contractility provoked by the endometrial fragments acting as a foreign body within the uterus; and (3) excessive progestational response induced by overactivity of the luteinizing hormone of the anterior pituitary body or increased production of intrinsic progestin.

In 1926, Whitehouse[22] advanced that any abnormal detachment of the decidual fragments is invariably associated with pain. In considering this theory, Cannon[17] argues that if irregular uterine contractions bear causal relation to and were not the result of abnormal separation of the menstrual endometrium, such abnormal separation would be anticipated in every case of dysmenorrhea.

Cannon[17] suggests that the endometrial tissue acts as a foreign body provoking uterine contractions (a view expressed by Ehrenfest, 23, in 1908). In a somewhat similar approach, Blair-Bell[24] stated in 1923 that dysmenorrhea results from the expulsion of blood clots. This theory is difficult to accept inasmuch as the total capacity of the non-gravid uterus does not commonly exceed 2 cc., that the production of blood clots implies the existence of a relaxed and boggy uterus, and that 40 per cent of normally men-

struating women[17] associate blood clots with the menstrual blood.

Impressed by the observation that the marked decidual-like reaction in cases of membranaceous dysmenorrhea suggested on actual accentuation of the progestational phase, Cannon[17] concludes that an overactivity of the corpus luteum hormone is existent, which, in turn, is due to an overactivity of the luteinizing hormone of the anterior pituitary. Valid conclusions are not permitted inasmuch as membranaceous dysmenorrhea is rare; that large amounts of injected progesterone (25 mg. daily for ten days) in the last half of the menstrual cycle will not produce membranaceous dysmenorrhea nor menstrual fragmentation in the form of casts; that greater quantities of progesterone decrease the likelihood of fragmentation; and that this theory is diametrically opposed to the assumption that dysmenorrhea results from corpus luteum deficiency.

ENDOCRINE THEORIES OF FUNCTIONAL DYSMENORRHEA

The growth of endocrinologic knowledge has assigned to the endocrine glands a role of increasing importance in the etiology and treatment of functional dysmenorrhea. In general, the basis of the endocrine theories concerning the etiology of dysmenorrhea and its therapy with endocrine principles is to be found in the antagonistic effects of estrogens and progestin, respectively, on uterine contractility. Studies on the uterus of the normal adult rabbit by Novak and Reynolds[25] have demonstrated that estrogens produce oxytocic effects, whereas progestin[26, 27, 28] tends to inhibit rhythmic uterine activity. It has been postulated that the uterus tends to lose its tone and rhythmic activity immediately following ovulation, the decreased contractility being dependent upon the production of the corpus luteum hormone. Knaus[29] ascribes a similar behavior to the human uterus.

As a result of the obscurity surrounding the etiology and the mechanism of dysmenorrhea and the hormonologic influences presumed to contribute to the production of menstrual pain, diverse endocrine preparations have been employed in the therapy of functional dysmenorrhea. The various endocrine theories and the rationale of the respective endocrine therapy may be reviewed briefly:

DYSMENORRHEA RELATED TO ALTERED ESTROGENIC METABOLISM: This relates the altered uterine contractility to faulty estrogenic metabolism represented by a three-fold mechanism: (a) estrogenic deficiency; (b) excessive estrogens; and (c) estrogenic imbalance. The clinical data supporting each theory may be considered briefly:

(a) *Estrogenic Deficiency:* Contrary to the existing theories that estrogens stimulate rhythmic uterine activity, numerous and varied reports of their therapeutic value in dysmenorrhea have appeared. Complemental therapy with estrogenic substance in dysmenorrheic patients has been prompted by the association of dysmenorrhea with uterine hypoplasia, oligomenorrhea and hypomenorrhea,[30, 31] thus suggesting hypoovarianism as the fundamental disturbance. The *modus operandi* of such therapy is equivocal.

Blotevogel and Poll[32] and Kennedy[33] have demonstrated that castration produces degenerative changes in the ganglia of Frankenhäuser and that estrogenic therapy will remedy the degenerative processes. Accordingly, Kennedy[34] states that the diminution of estrogenic substance produces alterations of the sympathetic nerve supply to the uterus with the resultant development of dysmenorrhea. Without stating dosages, Kennedy[34] reports that he obtained complete relief in ten cases, improvement in thirty and no amelioration in ten instances upon a therapeutic regime of estradiol and various ovarian extracts ("sistomensin", ampacoids" and "ovacoids"), basing the rationale, as noted above, upon the restoration of the cervical ganglia. Wintz[35] employed an ovarian extract ("sistomensin") in 125 cases of dysmenorrhea, administering 5 cc. daily for a period of several days prior to menstruation. He reports complete relief in eighty-two, improvement in fifteen and no effect in twenty-eight cases.

To his dysmenorrheic patients Tunis[36] administered six injections of 1,000 M.U. each of estrone ("Menformon") beginning fourteen days after the onset of the last episode of uterine bleeding. He reports that sixty-five of seventy-five patients were cured and eight were improved. Kaufman[37] likewise reports encouraging results with estrogenic therapy.

Goldberg and Lisser[38] treated forty dysmenorrheic women with estriol glucuronide (emmenin), obtaining remarkable improvement in more than 60 per cent. Watson[39] obtained gratifying results with "emmenin" in 105 cases of dysmenorrhea. He found complete relief in forty-nine patients, the beneficial results lasting as long as six months after cessation of treatment in twenty-one of these cases, partial

relief in twenty-seven patients and no alteration of the menstrual pain in twenty-nine cases. Analyzing the effectiveness of emmenin therapy in a series of 472 patients manifesting various menstrual symptoms and irregularities, Campbell[40] found that the best results in dysmenorrheic patients was obtained when treatment with "emmenin" was continued throughout at least three consecutive menstrual cycles. In an evaluation of diverse forms of endocrine therapy in thirty-nine cases of severe dysmenorrhea, Israel[41] reports that three patients in a group of ten were relieved by one tablespoonful (75 day-oral units) of "emmenin" three times daily for three or four months. Hamblen[10] concluded that he obtained the most consistent results in functional dysmenorrhea from the oral administration of estriol glucuronide ("emmenin") in daily doses of 480 day-oral units. He frequently supplemented this treatment with the intramuscular administration of 10,000 to 20,000 international units of injected estrogens on the eleventh and the thirteenth days of the cycle, continuing therapy for three or four months. Hamblen suggested that this form of therapy may possibly alter the metabolism of progestin.

Wilson and Kurzrok[18,21] report that 70 per cent of their dysmenorrheic patients treated with injected estrogen in the form of estradiol benzoate obtains relief. Emge[5] found theelin to be of value in six cases of a group of twelve dysmenorrheic patients, though moderate improvement only was obtained in four of the six cases.

Bishop, Boycott and Zuckerman[42] report two patients with dysmenorrhea completely relieved by the daily administration of 1 mg. tablets of stilbestrol, a synthetic preparation possessing estrogenic properties, during the last half of the cycle. Similar relief was obtained from four injections of 5 mg. of estradiol benzoate.

Special mention should be made herein of a recent paper by Sturgis and Albright[43] in which, in a study of twenty-five cases of dysmenorrhea, they report that injected estrogenic therapy consisting of 1.5 mg. of estradiol benzoate starting on the sixth day of the cycle and continuing, at three-day intervals, for six injections will prevent the development of a corpus luteum and will subsequently be followed by a cramp-fee period. They believe the presence of an apparently normal corpus luteum to be a prerequisite for the occurrence of functional dysmenorrhea, a view shared to some degree by Hamblen[10] and Wilson and Kurzrok.[18,21] It is not known whether ovulation is related to the development of menstrual cramps by virtue of the fact that the endometrium thereby becomes progestational in character or due to the fact that progestin exerts a direct action upon the myometrium. They note, however, that depression of corpus luteum development by estrogenic therapy cannot be achieved in two successive cycles, recommending therefore, that estrogenic therapy of this type be given during alternate months.

Mazer and Israel[44] likewise note more success generally by the administration of relatively large doses of estrogens. They report absolute relief of menstrual pain in ten of thirteen patients to injected estrogens consisting of 5,000 to 10,000 R. U. of estradiol benzoate every fourth day throughout a span of three to four months.

Hamblen, Cuyler, Pattee and Axelson[45] were unable to confirm the results of Sturgis and Albright. Hamblen and his group report that estrogens employed in ordinary dosages not only fail to depress corpus luteum function, but actually may enhance it, attributing, therefore, the clinical responses reported in dysmenorrhea and other conditions as being more likely related to this latter action.

Stimulational therapy with the equine gonadotropin (gonadogen) designed to induce greater production of estrogens in dysmenorrheic patients manifesting estrogen deficiency has been employed throughout the first half of the menstrual cycle by Shute.[46]

In a critical evaluation of these reports, it is apparent that estrogenic therapy, though unsubstantiated by physiologic evidence, may prove its effectiveness clinically by diverse mechanisms: (1) development of hypoplastic pelvic structures with accompanying increase in vascularity and improved metabolism of estrogenic principles and progestin; (2) depression of corpus luteum development; (3) enhancement of corpus luteum metabolism, possibly by altered or improved endometrial substratum; (4) restoration of the degenerative processes in the sympathetic nervous pathways, especially the cervical ganglia, which have been related to estrogenic deficiency; (5) unexplained pharmacological effects resulting in higher threshold to pain perhaps by means of improved general metabolism with resultant increase of sense of well-being; and (6) conceivably by an undetermined role of heterosuggestion.

On the other hand, pertinent clinical observations

do not permit unqualified acceptance of the theory of estrogenic deficiency: (1) Estrogenic hormones normally are not demonstrable at the time of menstruation; indeed, relative deficiencies of estrogens, progestin and gonadotropins[10] occur prior to the onset of the menstrual flow. (2) The endometrial findings[10, 66, 41] in dysmenorrheic patients commonly reveal diverse grades of progestational response, whereas the bleeding associated with estrogenic endometria (thought to be synonymous with more severe grades of ovarian failure)[47, 48] is usually painless. (3) Many women with hypoplastic pelvic organs commonly do not have dysmenorrhea; and conversely.

(b) *Excessive Estrogens:* This widely quoted theory, based on the observations of Novak and Reynolds,[25] attributes functional dysmenorrhea to an excess of estrogenic substances which stimulate uterine activity. Progestin deficiency may or may not be associated. Rational therapy, according to this theory, would constitute injected progesterone in order to depress rhythmic uterine activity ascribable to the oxytocic effects of estrogenic substances.

The following objections to this theory may be cited briefly: (1) Whereas hyperestrogenic endometrium is related presumably to a relative excess of estrogenic substances or hypersensitivity of the endometrial responsiveness to estrogenic stimulation, the bleeding associated with this form of endometrium is commonly painless. (2) The peak of estrogenic concentration is attained generally at the time of follicle rupture but, except for women with "Mittelschmerz", few women experience pain at that time. (3) As noted above, relative estrogenic deficiency commonly occurs prior to and during the menstrual flow. (4) Endometrial correlates in dysmenorrheic patients demonstrate repeatedly the preponderance of progestational endometria, whereas estrogenic excesses would imply development of estrogenic endemetria. (5) Although relative estrogenic excesses, i. e., estrogenic activity unopposed by the appearance of the corpus luteum principle due to anovulatory cycles, occur in the adolescent girl following menarche, the bleeding commonly is painless for the first two or three years, or until sufficient maturation of the ovaries has taken place to permit corpus luteum development. (6) The bleeding occurring in patients with granulosa-cell tumors of the ovaries (true estrogenic excess) is generally painless, as well as associated with diverse grades of estrogenic endometria.

(c) *Unbalanced Estrogens:* This theory of unbalanced or unopposed estrogenic activity stimulating uterine contractility with the resultant development of dysmenorrhea differs from the theory of estrogenic excess only in degree. It implies partial corpus luteum failure of the ovaries with inadequate progestin to balance estrogenic activity. Substitutional therapy with progesterone is indicated.

DYSMENORRHEA RELATED TO ALTERED PROGESTIN METABOLISM: As indicated above, alterations in progestin metabolism have been related causally to dysmenorrhea by a two-fold mechanism: alterations in uterine contractility, and faulty endometrial disintegration during menstruation. Three grades of altered progestin metabolism are presumed to exist: (a) progestin deficiency; (b) progestin excess; and (c) inadequate progestin metabolism ascribable to relative estrogenic deficiency.

(a) *Progestin Deficiency:* That functional dysmenorrhea may be due to a deficiency of the corpus luteum hormone (progestin) is ascribed to strong uterine contractions stimulated by an augmented production of estrogenic substances which, in turn, are not held in abeyance by ample intrinsic progestin. According to Witherspoon[49] and Novak,[25, 50] rational therapy, therefore, would consist in supplying the corpus luteum preparation or stimulating an increased output of intrinsic progestin by the luteinizing principle of pregnancy urine. In that connection, Witherspoon reports relief of menstrual pain in thirteen of seventeen patients treated by daily intramuscular injections of 250 rat units of chorionic gonadotropin (follutein) for three to four days preceding the anticipated flow.

In eleven selected cases, Campbell and Hisaw[51] demonstrated that temporary relief of menstrual pain may be attained by progesterone therapy though permanent effects could not be evaluated. Elden and Wilson[52] note complete relief in eight of seventeen dysmenorrheic patients, partial relief in two and no relief in seven instances treated by progesterone therapy. Israel[53] reports the administration of progesterone in the treatment of premenstrual tension, obtaining cure in one instance and temporary relief in six patients.

Lubin, Clarke and Reynolds[54] found that afterpains could be relieved by progesterone therapy and that the relief was attained before any significant alterations in uterine contractility could be demon-

strated. Further gratifying reports concerning the efficacy of progesterone therapy in functional dysmenorrhea have been presented by Urdan,[55] Allen,[56] Knaus,[57] Bishop, Cook and Hampson,[58] Fluhmann,[59] Lackner, Krohn and Soskin,[60] Kurzrok, Birnberg and Livingston,[61] Israel[41] and others.

Frank, Goldberger and Felshin[62] employed the oral preparation of pregneninolone (anhydro-hydroxy-progesterone, ethinyl testosterone; pregnen-in-on-3-ol-17) in twenty cases of dysmenorrhea, reporting that seven patients were completely relieved while continuing therapy but noted return of the dysmenorrhea upon discontinuation of therapy. Six of their patients experienced considerable to partial relief whereas seven were unrelieved. They conclude that the effectiveness by the oral route approximately parallels that obtained by intramuscular injection of progesterone.

Hamblen[10] finds progesterone therapy of little value in his group of dysmenorrheic patients.

The concept that dysmenorrhea may be attributed to progestin deficiency is difficut to harmonize with diverse clinical observations: (1) Studies of corpus luteum function by pregnandiol determinations (an excretionary product of corpus luteum metabolism) by Hamblen and his group[63] and Venning and Browne[64] indicate that the corpus luteum normally undergoes degeneration two or three days prior to the onset of bleeding, denoting a deficiency of progestin normally at the time of the menstrual flow. (2) Endometrial studies of dysmenorrheic women by Hamblen[10, 66] and his group and Israel[41] associate dysmenorrhea commonly with progestational endometria, thus signifying the non-existence of any significant ovarian failure. (3) The observations of Smith and Smith[65] show a rise of pituitary gonadotropic substance normally prior to menstruation which may be interpreted as stimulating the output of intrinsic progestin from the corpus luteum. (4) Negative clinical evidence concerning the efficiency of progesterone therapy in functional dysmenorrhea is permitted by the studies of Kurzrok, Wiesbader, Mulinos and Watson[20] concerning the action of progesterone on the human uterus in vivo. They observed that injections of progesterone failed to diminish spontaneous uterine contractions.

(b) *Progestin Excess:* As previously noted, Cannon[17] is the chief proponent of this theory. Inadequate clinical data exists to support this theory, a comprehensive analysis of which has been presented above relative to the discussion of the endometrial fragmentation theory of dysmenorrhea.

(c) *Inadequate Progestin Metabolism:* This theory[10, 45] implies insufficient estrogens to permit adequate metabolism, utilization and excretion of the intrinsic progestin with resultant altered uterine contractility ascribable to estrogenic stimulation. Rational therapy constitutes complemental therapy with estrogenic preparations supplemented by progesterone.

DYSMENORRHEA RELATED TO ALTERED ANDROGENIC METABOLISM: As Hamblen[66] and others have emphasized, the role of androgenic substances in gynecic physiology is not known. Therapeutic explorations, however, have assigned diverse assumptions and indications for androgenic therapy of functional dysmenorrhea. In general, these consider two grades of altered androgenic metabolism: (a) androgenic deficiency and (b) androgenic excess.

(a) *Androgenic Deficiency:* The diverse theories concerning the therapeutic employment of androgens in functional dysmenorrhea may be considered briefly: (1) The use of testosterone in the treatment of functional dysmenorrhea has been suggested by its similarity in pharmacological action to progesterone.[67, 71] (2) Testosterone is said to depress the gonadotropic production of the pituitary and inhibit ovulation, indirectly retarding estrogenic production. In addition, it is presumed to favor luteinization and the maintenance of the corpus luteum, augmenting the progesterone-like effect. (3) That testosterone leads to myometrial relaxation is indicated by the studies of afterpains by Abarbanel[72]; it has furthermore been shown to exert a trophic effect[68] upon myometrial growth and to stimulate a progestational response in the endometrium.

Many clinical data have appeared concerning the gynecic employment of androgenic therapy, exhaustive surveys of which have been presented by Huffman,[73] Geist,[74] Salmon[75] and Hamblen.[66] In 1937 Desmarest and Capitain[76] reported excellent results in their dysmenorrheic patients with injections of testosterone, noting, however, that dosages varying from 400 to 2,000 mg. a month were capable of suppressing uterine flow. This fact was confirmed later by Loeser[77] and Foss.[78, 79]

Salmon, Geist and Walter[80] note that twenty-six of thirty dysmenorrheic patients obtained symptomatic relief to 250 to 300 mg. of testosterone propionate given in divided doses of 10 to 50 mg. three

times weekly throughout the menstrual cycle. If discomfort recurred during the following cycle, the dosage of the injected testosterone was reduced to one-half the previous amount. They established the level of testosterone tolerance to be 500 mg. per month, i. e., dosages in excess of 500 mg. were apt to result in evidences of masculinization and subsequent estrogenic deficiency whereas dosages less than 300 mg. produce neither androgenic activity nor manifestations of estrogenic deficiency.

Greenhill and Freed[67, 81] report that one-half of their patients with dysmenorrhea continued to obtain clinical relief of the menstrual pain one year after discontinuation of therapy. They administered 25 to 50 mg. of testosterone propionate intramuscularly three times weekly for two weeks prior to the onset of menstruation. They caution, however, that testosterone propionate in dosages which are effective therapeutically predisposes to the induction of virilism, characterized by growth of hair on the face and body and deepening of the voice which did not improve following discontinuation of therapy.

Rubinstein and Abarbanel[68] noted gratifying improvement in twenty-six patients with dysmenorrhea treated with injections of testosterone propionate, reporting that sixteen patients obtained complete relief, that four patients were partially relieved, that four patients revealed no improvement and that two patients noted aggravation of the menstrual pain. Abarbanel[69] treated ten patients by the percutaneous administration of testosterone propionate in sesame oil with similar results.

Foss[79] reports the therapy of three dysmenorrheic patients with 10 mg. daily of methyl testosterone orally. He noted that two of the patients taking treatment of this form for fourteen days prior to menstruation obtained no relief whereas the third patient improved upon the oral administration of methyl testosterone in the middle of the cycle. The addition of bile salts[69] is said to enhance considerably the effective absorption of the methyl testosterone.

Greenblatt[82] and Rubinstein and Abarbanel[68] find testosterone propionate to be of value in the relief of premenstrual tension and molimina.

Pertinent clinical observations do not permit indiscriminate therapy of functional dysmenorrhea with androgenic principles: (1) The role of androgenic substances in gynecic physiology has not been established, thus delineating few clear-cut indications for androgenic therapy in health or disease of the woman.[66] The defeminizing and "ovarian-negating" effects produced by androgenic substances may produce profound disturbances in ovarian function in dysmenorrheic patients thought to have little significant ovarian failure. (The occurrence of progestational endometria is presumptive evidence of adequate ovarian responsiveness.) (3) As will be stated below, urinary titers for 17-ketosteroids (androgens) reveal no "androgenic" deficiency in dysmenorrheic patients; rather, there is a slight excess of "androgenic" substances. (4) The danger of induction of diverse andromimetic effects subsequent to androgenic therapy warrants caution in the employment clinically of androgenic principles.

(b) *Androgenic Excess:* In a group of twenty-nine dysmenorrheic patients, the daily urinary excretion of 17-ketosteroids (androgens) throughout at least one menstrual cycle ranged from 22 to 131 I. U., the average daily excretion being 68 I. U. These values contrast sharply with similar determinations of thirteen presumably healthy women, in whom the daily "androgenic" values ranged from 15 to 47 I. U. with an average of 34 I. U. In light of these findings, it is difficult to rationalize androgenic therapy for functional dysmenorrhea.

The excessive "androgenic" excretion may indicate a two-fold mechanism: (a) relative ovarian failure in which the increase in androgenic values represents compensatory activity by the adrenals[83]; (b) alterations in the neuro-endocrine sympathies in which the anticipatory molimina of menstruation provokes neurogenic responses generally by the apprehensive woman.

DYSMENORRHEA RELATED SECONDARILY TO THYROID DISEASES: As emphasized recently by Gray,[84] Pohl[85] and Emge,[5] the gynecologist notes frequently subjective improvement of dysmenorrhea to thyroid therapy in hypothyroid patients. Although the mechanism of thyroid activity in dysmenorrheic patients remains obscure, diverse alterations are doubtlessly effected by thyroid therapy: (1) improvement in the sense of well-being and altered threshold to pain as a result of the metabolic adjustment ascribable to thyroid activity generally throughout the body; (2) indirect effects mediated by alterations in the pituitary-gonadal axis with depression of follicle stimulation and augmentation of leuteinizing phenomena; and (3) peripheral effects related to improved oxygen metabolism permitting more adequate

metabolism and utilization of ovarian principles.

Critical objections to the acceptance of these theories include: (1) Inasmuch as the sensorium of the hypothyroid patient is somewhat dulled, alterations in the threshold of pain by thyroid therapy would be negative in value rather than beneficial to subjective improvement. (2) Studies of ovarian function in hypothyroid patients by Hamblen. Pullen and Cuyler[86] permit no assumption of impaired or altered endocrine function of the ovaries as demonstrated by present diagnostic criteria in thyroid deficiency states.

Therapy of dysmenorrhea in hyperthyroid states is emphasized by Hertzler and his associates[87] who observe that dysmenorrhea is associated frequently with "interstitial thyrotoxicosis". Noting that the menstrual pain improved under adequate medical and surgical management of the hyperthyroidism, they termed the menstrual pain as "goiterous dysmenorrhea". The mechanism of the dysmenorrhea in hyperthyroid states is obscure.

DYSMENORRHEA RELATED SECONDARILY TO ALTERED CARBOHYDRATE METABOLISM: This considers alterations in carbohydrate metabolism ascribable to diverse grades of insulin activity: (a) hypoglycemic states presumably related to excessive insulin production; and (b) faulty nutritive levels believed generally to represent relative insulin deficiency. Clinical evidence supporting these theories may be considered briefly:

(a) *Low Carbohydrate Levels:* Noting that many dysmenorrhea patients manifested nausea, vomiting and feelings of faintness, Tedstrom and Wilson[88] suggested that dysmenorrhea may be related to hypoglycemic states. They found, in a study of thirty-eight patients, that extra carbohydrate feedings at frequent intervals relieved premenstrual tension and menstrual pain in 80 per cent of their cases and that the intravenous administration of 25 cc. of 50 per cent glucose produced prompt relief in eight patients.

(b) *High Carbohydrate Levels:* Inadequate carbohydrate metabolism consequent to relative insulin deficiency implies poor general metabolism. The efficacy of insulin therapy in functional dysmenorrhea has been ascribed to a two-fold mechanism: (a) improvement in nutrition generally by improved carbohydrate metabolism; and (b) direct effects on ovarian function mediated by alterations in the pancreatico-ovarian axis.[89] Based on the studies of Fleiderbaum,[90] Poulain-Landrieu,[91] G. Williams and R. L. Williams,[92] Altschul[93] administered seven to ten units of regular insulin daily either at the onset of pain or over a period of three days prior to menstruation to a group of twelve cases of dysmenorrhea. He reports total relief of pain in ten, partial relief in one and relief in one of two periods in the twelfth case. All blood sugars were normal. He noted, however, that not every brand of commercial insulin was effective. Schrick[89] reports similar observations in a group of ten college girls.

CONCLUSIONS

Evaluation of the diverse forms of endocrine therapy advocated for the treatment of functional dysmenorrhea permits these generalizations:

(1) Every dysmenorrheic patient should receive thorough diagnostic investigation to differentiate the gynecological, medical, urological and orthopedic forms of dysmenorrhea from functional dysmenorrhea before endocrine therapy is considered.

(2) Although the endocrinologic origin of dysmenorrhea is worthy of consideration, the specific relationship remains obscure.

(3) Therapeutic trial with endocrine products is justifiable in critically selected patients, if full diagnostic evaluation from an endocrine approach has been pursued.

(4) The majority of women with dysmenorrhea manifests no ovarian failure as judged by progestational responses obtained by endometrial biopsies.

(5) Dysmenorrheic patients tend to excrete "androgenic" substances in greater quantities than those excreted by normally menstruating women.

(6) Endocrine therapy of functional dysmenorrhea *per se* is disappointing.

(7) Rational therapy of various endocrinopathies oftentimes results in the alleviation of menstrual pain.

(8) Probably functional dysmenorrhea results from no single endocrinopathic condition thus accounting for the various regimes of endocrine therapy employed clinically.

(9) Non-specific pharmacological effects of endocrine preparations must be appreciated before a more definite role can be assigned to organotherapy. Special note should be made herein of the newly established concepts relative to neuro-endocrine sympathies.

(10) The role of psychotherapy is ever present to mask the effectiveness of endocrine therapy.

(11) Psychotherapeutic measures designed to correct inadequate mental preparation for adolescence and poor psychic orientation to menstruation enhances considerably the effectiveness of any form of therapy of functional dysmenorrhea.

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THE AIRPLANE, A POSSIBLE MEANS OF TRANSMISSION OF DISEASE*

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To the great development of aviation in the last decade and all its advantages there are added two great disadvantages, i.e., its use as a deadly implement of warfare and the danger of conveying infectious diseases. The latter disadvantage is the subject of this discussion.

The diseases chiefly concerned are: cholera, plague, smallpox, typhus fever and yellow fever, but also malaria and dengue may well be considered. The incubation periods of these diseases are from two days to two weeks. For cholera it is two to five days; for plague two to six days; for yellow fever three to six days; for typhus fever five to twelve days; and for smallpox ten to fourteen days. The usual flight traveling time is less than a week so that a traveler can very easily become infected just before departure and break out with the disease a day or so after reaching the port of destination. Thus the human being may be an important carrier during the incubation period of serious disease.

To prove airplanes do transport mosquitoes and are thus a potential danger, four reports are recorded.

*Read before the Medical Society of Virginia at its annual meeting at Virginia Beach, October 6-8, 1941.

F. G. S. Whitfield[1] of London reported in 1939 that, after examining 2,000 aircraft at Khartoum airport, 1,960 insects of 146 species were collected. Inclusion of the house fly would make a total of nearly 3,000. Of these 2,000 planes examined, 192 harbored infectious insects, excluding the house fly. These insects were fairly evenly distributed during the year, with slight increase from July to October. Among those insects were four species of Anopheles, six Aedes, including two of Aedes egypti taken at Molakai and four of Culex. Of fifty-two planes arriving at Kisumu from the north, about 50 per cent harbored insects, including the Culex and Anopheles mosquitoes.

Griffitts and Griffitts[2] reported that after their inspection of three types of airplanes operated in the Caribbean, namely the Fokker, Sikorsky, and Commodore, during July 23 to September 18, 1931, and from the 102 planes carefully inspected at Miami, twenty-nine mosquitoes, one Aedes egypti and twenty-eight Culex were captured. Twenty-four were caught on the Sikorsky, mostly in the front baggage compartment; four on the Commodore and

one on the Fokker. This difference may be due to the difference in prevalence of mosquitoes at ports of departure.

They continued their experiment by obtaining the Aedes egypti and turning them loose in the planes on three different flights from San Juan, Puerto Rico, to Miami, and were able to recover twenty-two of 100 let loose after traveling 1,200 miles in ten hours and ten minutes with three intermediate stops. They state that while certain types of airplanes carry mosquitoes, yet under average natural mosquito breeding conditions around airports, heavy infestation of aircraft would not be expected and only small numbers of mosquitoes would make the trip. However, even one infected Aedes might start an epidemic. They also state that while airplanes may and do transport mosquitoes, this mode of introduction of mosquito-borne disease is probably secondary in importance to importation of infected man.

The prevalence of insects in the cabins of aircraft varies with the site of the airdrome, that is whether it is on land or water and the distance it is from the shore. There are many places in the planes where mosquitoes may rest and not be disturbed by air drafts, such as under seats, baggage compartments, etc.

Recent investigations by the Pan-American Airways, reported by Cummings in 1938, indicated that interior disinfection of aircraft is insufficient because the mosquitoes and other insects may find safe harborage in the space between the outer and inner linings of the aircraft, or in the hollow wings. The exterior of aircraft offers many hiding places such as the space for retracted under-carriage and various grooves and rivet holes.

E. V. Welch[3] reported that after the inspection of all incoming aircraft at Miami from Central America, South America, and Mexico in 1938, of the 398 aircraft examined 187 contained dead and live insects of various species. One hundred and sixty-six of the 651 insects recovered were alive in spite of the fact that the planes were sprayed carefully with an insecticide one-half hour before landing, as required by regulations. Of the 651 insects found, forty-five were mosquitoes, forty dead and five alive. No Aedes egypti were found but Griffitts has reported the Aedes egypti captured and identified from planes coming from Cuba and other southern ports.

The transmission of insects by plane has thus been proven, and the short flying time indicates the ease with which an infected person may enter a port and in a few days come down with a serious insect-borne disease, thus being a potential danger of its spread.

Fortunately, up to the present time, there is not much indication that there has been a very serious increase in spread of disease by airplanes. However, Findley in 1938 strongly suggested this possibility in noting the recent spread of yellow fever from the endemic zones in West Africa, as far eastward as the Southern Sudan. In 1933, 1 per cent of the population had a positive yellow fever response to the mouse protection test, and in 1938, 21 per cent gave the same positive response.

Dr. H. L. Schlotthauer[4] reported four unusual cases following, in a period of a few weeks, the arrival at Muroc of a group of military planes reported to have come from South America by way of Panama. There were cases of acute illness produced by the bite of an insect previously unknown to residents of the Mojave Desert. The symptoms varied from urticarial wheals and fever as high as 103 degrees, occurring an hour after the bite. There was also swelling of the affected area, lasting as long as a week. In one case there was lethargy of two weeks' duration. All recovered after symptomatic treatment.

Specimens of these insects were taken and identified as paratriatoma hersutus barber, considered a member of the family of blood sucking vectors of American tripanosomiasis. These are commonly seen in South America.

Yellow fever should be given some special consideration because of its tremendous importance, the possibilities of its transmission and as a cause of devastating epidemics. For a long time, Aedes egypti alone was thought to be the sole vector of yellow fever, and by 1914 it appeared that the disease might be eliminated. The Rockefeller Board undertook to do this and sent General Gorgas to Africa. Since that time, however, twenty-two species of mosquitoes, certain flies, bed-bugs, ticks and cockroaches have been incriminated as yellow fever vectors. In the last fifteen years several epoch-making discoveries have followed one another in rapid succession concerning this disease. In 1927 Stokes, Africa. Since that time, however, twenty-two species of monkeys are naturally susceptible to the disease. Later, other animals were found susceptible and especially the English hedgehog. Certain species of

mice may be rendered readily susceptible to yellow fever.

In discussing this disease I wish to quote Dr. B. J. Lloyd:[5] "A method of preserving the virus in vitro indefinitely; the first method of attenuating the virus by passage through mice, rendering it not innocuous, but relatively so, for men and monkeys, but fatal to mice; development of a technique for immunizing against yellow fever by using attenuated (mouse brain) virus with immune serum; development of the mouse protection test, which reveals the protective power of the blood of an immune person who may have had the disease half a century or more ago; proof by cross-immunity tests of the identity of Central American, South American and African yellow fever by animal protection tests, and of Brazilian and African yellow fever by establishing cross-immunity, using separate strains of the living virus; the discovery of a dozen or more new vectors of the disease (mosquitoes); the discovery of 'jungle' yellow fever; the finding of immune individual monkeys in susceptible races of monkeys in the forests of South America; the finding of circulating yellow fever virus in the blood of monkeys in Brazilian forests; the discovery that yellow fever is transmitted to man in the absence of all known vectors (not in the absence of all mosquitoes); the development of a technique of bed-side laboratory diagnosis by inoculation of mice with blood from the patient; the use of the viscerotome in the post-mortem histo-pathologic presumptive diagnosis of yellow fever; and the attenuation of yellow fever virus by growing it in living tissue, and the use of this attenuated strain without immune serum in immunizing human beings against the disease.

"By a process of drying and freezing in vacuo, the virus of yellow fever may be preserved in glass tubes for years at ice box temperatures. By passage through mice which have suffered slight brain trauma, a neurotropic form of virus has been produced which is only rarely lethal for monkeys, and which has been used successfully with immune sera for immunizing both in man and animals. Before the development of this technique there had occurred thirty-six cases of yellow fever with six deaths as the result of laboratory infections. No cases or deaths have since been recorded in immunized laboratory workers."

Among these discoveries one of the most notable is the so-called mouse "protection test" of Sawyer and Lloyd[6] developed in 1931, following the discovery by Theiley in 1930 that white mice are susceptible to intra-cerebral injections of virus. This led to the most important epidemiological discovery concerning yellow fever. This was made by Soper who, making use of the above information, found a vast previously unknown reservoir of infection in the interior of South America which he defines as "yellow fever recurring in rural, jungle and fluvial zones in the absence of Aedes egypti and the absence of all the present known mosquito vectors, with the possible exception of Haemagogus."

Dengue fever is also transmitted mechanically by two types of Aedes, including the egypti and possibly two others, so that a dengue "reservoir" may be found in uninhabited jungle areas.

Malaria, in spite of accumulated knowledge concerning it, is said by Simmons[8] still to exceed all others in sapping the vitality and impeding the social, industrial and political progress of the inhabitants of many tropical countries. While we think of the Anopheles quadrimaculatus as the vector, there are many other vectors of the Anopheles group of malaria, at least eight and probably more, with their different modes and location of habitation. So, for the past twenty years there has been no decrease in malaria in the Canal Zone, although the anti-mosquito work still goes on as much as ever, indicating the difficulty of control in these tropical areas and the ease with which it may be spread by the airplane.

These recent discoveries have introduced the following new problems:

1. Search for still unknown vectors and hosts of the jungle infection;
2. Methods of protection of individuals exposed in those regions;
3. Precautions against the spread of these diseases from the jungle areas to Aedes infested centers. Such spread has been traced in a few outbreaks.

In addition, it may be well to quote Kolmer[9] here, who says; "Once any of these become epidemic in the United States it is possible and probable that our own various insects may become conveyors or vectors of the organisms from animal to man or man to animal." Bennett[10] has already shown that the common Jersey mosquito can transmit yellow fever virus to monkeys. Kolmer also listed a great variety of insects that carry diseases, all of which might be transferred by airplanes, but it is beyond

this paper to enumerate them here. .

Draper[11] in 1939 called attention to the vast number of aliens arriving from various countries and mixing with the others at Croydon, the London terminal. The inadequately manned and consequently poorly controlled examination of the aliens leaves London "wide open", he says, for admission of these infectious diseases. At that time he said that only 20 per cent of the aliens were being examined.

Up to March, 1939, the International Sanitary Convention for Aerial Navigation[12] did not apply to service aircraft of any nation, so, unless they do conform to these regulations, preventable diseases may be spread by air, especially by aircraft moving from one command to another, in tropical and subtropical countries.

This danger was foreseen and resulted in the origin of the International Sanitary Convention for Aerial Navigation at the Hague in April, 1933, and has since been ratified by practically all the countries of the world. Each government has its own regulations regarding sanitary control of aviation, applicable at all official airdromes, for arrival and departure of foreign aircraft not permitted to land elsewhere. In case of a forced landing, the commander of the plane must notify the local authorities, and the crew, passengers and cargo must not leave the vicinity until permission from the local authorities is granted.

The fear of the introduction of yellow fever into India is so great that that government prohibits people coming from suspected yellow fever areas of Africa to enter India until nine days have elapsed since their departure from the affected area. India has even prohibited importation of yellow fever virus for research purposes. India, Egypt, and Iraq have virtually agreed to inform one another by telegram of any air passengers coming from a dangerous area.

The Health Organization of the League of Nations provides an international intelligence service which promptly informs health authorities throughout the world of the incidence of infectious diseases at various ports and airports.

Whitfield, because of the existence of yellow fever virus in the area involved, has advised against an airplane route from London, via Africa, to India and Australia.

As a point of consolation to the British, Massey[13] has pointed out to them that the possible spread of yellow fever to the British Isles is not likely to be a serious matter because of the climate. The Aedes egypti cannot establish itself permanently and breed further north than 40 degrees latitude, which is about the equal of the southern part of Spain. Against this assurance there is the possibility that some other vector might become infectious and be able to live and breed in that climate.

In the general procedure to prevent spread of infection, the countries concerned have adopted at least three precautions:

1. Systematic destruction of mosquitoes on all airplanes;
2. Vaccination of all flying personnel as soon as practicable;
3. Careful inspections of passengers to eliminate infected.

The Pan-American Airways System has adopted the Pan-American Sanitary Code which, in addition to this, agrees to present certificates showing the origin of the passenger's trip from the start to the end of the voyage, the listing of the localities visited six days prior to travel. The certificate of origin of passenger is not required if the passenger originates south of 30 degrees South latitude, unless he stops over for more than one day north of this area.

For effectual destruction of mosquitoes in aircraft, a suitable sprayer and insecticide are essential. As previously pointed out, this method is not yet perfect and probably will be improved from time to time. A suitable insecticide for aircraft has certain requirements. It must be:

1. Highly toxic to insects;
2. Innocuous to passengers;
3. Non-inflammable;
4. Non-corrosive and non-staining;
5. Stable in all climates and readily miscible with water.

For this water-soluble pyrethrum concentrate requiring dilution 10-14 times with water immediately before use is commonly used. About 30 cc. of 1:15 solution per 1,000 cubic feet of space is used. It is sprayed by a nebulizer. The plane is sprayed in the air about one-half hour before landing and the planes' ventilators are closed about ten minutes after the spraying. Further, the airplanes may be fumigated during the night and opened the morning prior to embarkation of passengers.

In addition to vaccination of the personnel as required, it is a very wise precaution for all pas-

sengers intending to travel by air through yellow fever areas also to receive the inoculation. One inoculation of the virus, which is issued in solidified form in ampules, is given in the deltoid region about fourteen days before expected date of arrival in the yellow fever zone. The contents of the ampule are dissolved in 1 cc. of cold sterile water and injected. Heat and alcohol will easily kill the virus. This protective inoculation has proven a most valuable preventive measure against yellow fever. Protection begins about a week after inoculation and is fully developed in 90 per cent of the cases in three weeks. The immunity lasts about two years and is equally effective against urban and jungle types of the disease. Since the personnel of the International Health Division was vaccinated, no case of yellow fever has occurred among them.

The third precaution is the most difficult and is as follows:

1. Medical inspection of passengers;
2. Isolation in hospital of infectious cases other than tubercular or venereal;
3. Surveillance of contacts during the incubation period of the disease;
4. Proper disposal of excreta on arrival;
5. Provision for a safe drinking water supply protected against mosquito breeding; the aircraft must be disinfected and emptied out and the tanks further disinfected before refilling with drinking water.

In addition, certain special measures are adopted regarding special diseases such as plague, cholera, typhus fever and smallpox. If any one of these is found or suspected, the following additional measures may be necessary:

1. Thorough cleansing of the aircraft;
2. Medical inspection of the passengers and crews;
3. Exclusion of any person showing symptoms of these diseases;
4. Inspection of personal effects if necessary.

In case of plague, the following additional measures are used:

1. Immediate disembarkation of the sick;
2. Surveillance of contacts and suspects for not over six days;
3. Disinfection and disinsectization of personal effects;
4. Deratization.

For cholera the same measures are used as for plague except that the period of surveillance is five days and the drinking water must be disinfected and also the containers emptied and disinfected. In addition, the unloading of fresh fish, shell-fish, fruit and vegetables is prohibited. This is true also if the airplane has come from a cholera-infested area. For typhus fever the measures are the same except for delousing and surveillance of twelve days. For small-pox, vaccination and surveillance for not more than fourteen days.

In yellow fever regions, the airdome must be at an adequate distance from the nearest inhabited center, must be provided with a water supply protected against mosquitoes, and mosquito proof dwellings for aircraft crews and for the accommodations of passengers. Passengers and crews must be kept under surveillance for six days.

In case an airplane arrives from abroad, and a death occurs on board, the commander of the craft must notify the proper authorities. Infected aircraft, or those from infected areas, must not discharge passengers, crew or cargo till the medical officer has examined them and declared them free from infection.

SUMMARY AND CONCLUSION

1. It has been proven that the airplane can and does carry live insects, including some vectors of dangerous diseases.

2. The plane may very easily carry infected individuals if they are not discovered.

3. Fortunately no serious epidemics have yet actually been traced to airplanes as the means of spread, but there is accumulating evidence that the airplane has played some part already in spread of disease.

4. There is still much more information to be obtained regarding other possible vectors of serious diseases and the possibility of this transmission by airplane.

5. With continued increase of flying speed and opening up of new routes of travel these dangers increase.

6. Many of these routes are either in or across the tropics and sub-tropics where most of these diseases abound.

7. There is little assurance that our tropical or sub-tropical communities are under sufficient control to prevent widespread transmission of a disease like yellow fever once it enters that community.

8. This danger is even more apparent today, since there are now known to be other vectors of yellow

and malaria fever other than the Aedes egypti and Anopheles quadrimaculatus.

In view of these established facts it is incumbent on the proper authorities to see that all possible means known to prevent the introduction of those diseases should be used, including especially:

1. A more widespread vaccination against yellow fever among those who travel in yellow fever regions when the products become available for common use.

2. More liberal vaccination against cholera in cholera infested areas.

3. More perfection in disinfecting airplanes.

4. More careful and thorough inspection of passengers and cargoes from planes coming from any of the infected areas. This last point is especially to be emphasized, because, as air travel becomes more and more popular and more and more within economical reach of the lower strata of society where these diseases are more prevalent, the dangers will become still greater.

Careful regulations under direction of thorough and competent health officers with adequate equipment and personnel may be the summing up of directions for control of a condition that has tremendous potentialities for spreading diseases and death.

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Discussion

DR. HUGH H. TROUT, Roanoke: Sometime ago I heard Dr. Jackson read this very excellent paper and following same, I wrote to the Program Committee of the Medical Society of Virginia and told them that I thought Dr. Jackson could be persuaded to bring it here. They arranged with him to present it, and without my knowledge, put my name on the program to open the discussion on Dr. Jackson's paper. Now, I have never been up in an airplane, and I know absolutely nothing about them. I have never been a health officer and know very little about health matters, but I do know that Virginia has one of the best, if not the best, health officers in the United States. For these reasons, I have asked Dr. Riggin to take my place in opening this discussion, and I hope my action meets with the approval of the Society.

DR. I. C. RIGGIN, Richmond: I have known Dr. Jackson as long or longer than any other man in this audience, probably. We graduated in the same class, and it is a real pleasure for me to be up here and to tell you that I think Dr. Jackson has presented this subject most ably and has covered it in a most excellent manner. He has brought to your attention a matter to which I believe very few of us have given serious consideration. There is nothing that I can add to what he has said other than to carry it just one step further, and that is as to the part that the health officers in the respective states might play in this.

I believe that Dr. Jackson intimated that the problem might possibly become more acute from the standpoint of the spread of various diseases through the use of the airplane. To me it appears likely that the tremendous increase in the number of airplanes and in airplane use by the armed forces of this country is going to open up additional channels for bringing in these diseases. It is probably going to make the problem greater. It will make the problem greater because there will be more difficulty in keeping an accurate check on contacts. It might surprise you to know that we have had one instance in this State of a contact or suspect coming in on an airplane who might develop yellow fever. The procedure is that when an airplane arrives at a port, if the passengers have been in a community where yellow fever is prevalent but do not develop yellow fever before they arrive and there is no indication that they have it, wherever their destination may be the state health officer in that particular state is notified that those persons are coming within that jurisdiction. The state health

officer then notifies the respective local health authorities that those persons will arrive at certain destinations on a certain date and that they must be kept under observation during the incubation period. That has happened already in one instance in this State. The local physician who would be called by the person coming in is notified, so that if any developments occur which would indicate that the person who has arrived is becoming ill with any of these diseases, the local physician may have some indication as to what diseases the person has been exposed to.

I might say, Dr. Jackson, that I think this is a subject that should be presented to every physician in this country, because I believe there is the possibility of the spread of diseases within this country which we do not now fully realize. Dr. Jackson mentioned that yellow fever ordinarily would not occur above 40 degrees latitude—the latitude of Spain, for instance. If you take your world map you will see that some sections of this country are opposite Spain, and if you review your medical literature you will also know that we have had yellow fever in this country. We hope this weather will not keep up, but we might as well be living in the tropics now so far as feeling goes. I have also heard that there were some mosquitoes at Virginia Beach last night, although I did not see them.

I do think this is a paper that should be considered very carefully. Dr. Jackson, I personally am indebted to you for presenting this matter to this Society.

DR. JACKSON, closing the discussion: I have nothing in particular to say in closing except that I want to thank the gentlemen for the discussion.

Of course, we in the Service are vaccinating as nearly as we can all members of the Service, because we do not know what may happen in the next few months.

DIABETES INSIPIDUS FOLLOWING ENCEPHALITIS

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and
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Diabetes insipidus produces immediate and daily inconvenience to the sufferer of such degree that medical aid is sought repeatedly until relief is despaired of or obtained. Disturbance of rest and irritability secondary to urinary frequency may impair health, as may polyuria through loss of vitamin B.[1] At any rate relief of the polyuria changes the patient's outlook and disposition favorably. Until recently the treatment with effective preparations of pituitary was inconvenient and costly and many patients were thus deprived of this relief. The satisfactory administration of powdered pituitary intranasally has lowered the cost and simplified the treatment so much that no patient with this disease need neglect it.

CASE REPORT:

A woman forty-nine years old, Case No. 240, was referred to us October 27, 1938, on account of thirst and polyuria. The present illness began with a fainting spell August 14, 1936. She remained unconscious for some minutes and was then put to bed. There were no prodromal symptoms save slight fever and malaise earlier in the day. After regaining consciousness she noted extreme weakness. During the next two weeks she remained in bed with delirium and high fever. No muscular paralysis was admitted, but the patient remembers little that transpired during this period. The fever subsided but recurred when she attempted to get up. During the next six weeks a slight drawing sensation behind the knees, considerable thirst and polyuria, and marked weakness and anorexia with intermittent fever were experienced. There was a loss of weight from her usual 200 pounds to 165 pounds during this period, but during the next eight months this was regained. After this acute illness, marked languor and lassitude together with stiffness and limitation of motion of the hands and knees, enough to cause serious difficulty in arising from a chair, persisted until we first saw her. The weakness and joint discomfort prevented her walking more than two blocks at a time. The thirst, dryness and polyuria remained severe until admission to the Retreat for the Sick hospital in October, 1938. She drank two gallons of water during the day and at least three quarts at night, but the urinary output for the day and night were about equal. The daily output was usually about twelve quarts. This varied with the intake which could be controlled to a slight extent, but was usually two and a half to four gallons in twenty-four hours. She voided seven to eight times in the day and four to five times at night, each voiding consisting of one to two quarts of urine.

The physical examination disclosed a fat, healthy

looking woman, sixty-seven inches tall, weighing 202 pounds. The teeth on the left side had been filed down because they had become too long in the last year or so. The right knee jerk and ankle jerk were less active than the contralateral reflexes. The temperature was 99.4 degrees and the pulse 84. The fingers were slightly swollen and showed limited motion, the knees some stiffness and crepitation. The examination was otherwise negative, including optic fundi and visual fields.

The patient voided 2000 cc. of urine at 7 P. M. and at 9 P. M. voided 1500 cc. This was entirely negative except for a specific gravity of 1.002. The postprandial blood sugar was 160 mg. on one occasion and 170 mg. on another. Only 0.2 per cent glycosuria was ever found. The uric acid was 4.8 mg. The hemoglobin was 75 per cent. The white count, blood smear and blood Wassermann were negative.

Twenty pressor units of pitressin (1 cc.) was given subcutaneously at 7 A. M. and 7 P. M. The urine output decreased to 3190 cc. the first twenty-four hours and to 1960 cc. the next day. The specific gravity rose to 1.015 each day. Pitressin jelly intranasally was tried next. At first ten pressor units was used twice daily, but the output remained somewhat high, 4560 cc. The applications were then used three times daily, and the output dropped to four quarts within twenty-four hours. Using fifteen pressor units intranasally at 2 P. M. and again at 9 P. M., she noted an output of three quarts during the day and two to five quarts at night. A week later her output increased to over two gallons, and we found that the jelly in that tube was cold and very stiff and that most of it dropped back into the throat and was swallowed. In general the jelly gave variable results, but usually the output was approximately five quarts.

The cost of the jelly was about $9.00 per month, which was a saving of $6.00 as compared to pitressin by injection. Nevertheless, the somewhat unsatisfactory results led us to experiment with the latter. By using 0.5 cc of pitressin (ten units) at noon and 8 P. M. the output was cut to 1200 cc. in the day and 1400 cc at night, a total of 2600 cc. Using only the 8 P. M. dose, to decrease the annoyance of nocturia, proved unsatisfactory. Using the noon dose every second day and the evening dose daily kept the output at three quarts in the day and one pint at night. Due to the expense the patient stopped the injections which she herself had been taking since beginning treatment seven weeks previously, but the urine output remained below six quarts even without pitressin in any form.

During this period general treatment with a balanced diet plus concentrated vitamin A, B and D preparations had been given. In addition 1 cc. of antuitrin-S had been injected intramuscularly twice weekly. The weight had remained about the same in spite of dietary recommendations. Cincophen was used a while for the arthritis. The joints became less stiff and sore, and the patient gained in strength and energy. She was encouraged to keep herself occupied with affairs at home rather than to follow her desire to avoid activity and responsibility. The failure to lose weight was only partially explained by a basal metabolic rate of minus 19 per cent. More careful instruction in the diet resulted in a loss of ten pounds in three months. Seven months after treatment was begun, the patient was much improved. She did much of her housework, set out fifty chrysanthemum plants one day and canned five quarts of tomatoes another day in addition to the usual household duties. Her joints were very much better and her attitude entirely changed. She had been depressed and emotionally unstable, but at this time she was cheerful and interested in her family and the activities going on around her. A total of twenty-one injections (21 cc.) of antuitrin-S and five injections (5 mg.) of estrone had been given in addition to the general supportive treatment and encouragement.

Throughout the summer and fall of 1939 she remained well. The joints caused no trouble save for limited flexion of the fingers of the left hand. Her appetite was enormous and the diet was discarded, resulting in a gain of ten pounds. The urinary output gradually increased from about six quarts a day shortly after the cessation of treatment with antuitrin-S to an average of fourteen quarts daily ten months later.

On January 3, 1940, her weight had reached 210 pounds, and her urinary output was two to three gallons daily, but she felt well otherwise. Nasal insufflation of posterior pituitary powder was instituted according to the method described by Rutledge and Rynearson.[2] Using the powder three times daily reduced the urine output to three and a half quarts a day, abolished nocturia, and cut the number of voidings to three or four each twenty-four hours.

On January 14, 1940, a few minutes after taking the powder, she experienced a sudden choking as if her windpipe was shut off so that she couldn't get her breath. She coughed steadily and her face became very red. The attack subsided in thirty minutes. That afternoon she suffered from sore knees and severe urticaria. After the evening dose she had a similar attack. The generalized pruritus lasted five days, and for ten days she noticed a wheezing and rattling in her chest. She took no powder during the next two weeks. Then she tried a very small dose with a similar, severe choking spell which necessitated her going outdoors for air. This time there was no itching or subsequent wheezing. After the above three doses, the usual decrease in urine volume did not occur.

An extract of the powder was made and she was gradually desensitized by hypodermic injections over a period of two months. The only ill effect was the formation of hard, tender lumps at the site of injection. Nasal insufflations were gradually increased in size and frequency until the patient was again regulated with four doses daily which are taken without trouble, discomfort or embarrassment. When last seen on April 30, 1941, she was still energetic, strong, cheerful and comfortable with little or no evidence of joint trouble. She had no nocturia and voided only three or four times a day, the total daily output varying from three to four quarts. The cost of this simple treatment is about $2.00 a month as opposed to the high cost, discomfort and greater inconvenience of pitressin by injection.

COMMENT: In view of the immediate sequence of events it seems likely that the febrile attack in 1936, diagnosed tentatively at the time as "grippe", was in reality encephalitis which involved the pituitary area and thereby induced the diabetes insipidus. The glycosuria of 0.2 per cent and the blood sugar of 170 mg. may have been a result of involvement of the sugar regulatory center in the same cerebral area or it may have been hepatic in nature due to obesity, as surmised by Newburgh.[3] At any rate it has proved to be so mild as not to be disturbing, even though the patient has failed to lose weight. The large bladder capacity seems worthy of note.

SUMMARY: A woman, fifty-one years old, apparently had encephalitis four years ago which left her with diabetes insipidus, arthritis, emotional upset, and marked languor and lassitude. General treatment was supplemented by injections of antuitrin-S and estrone. The diabetes insipidus was treated with pitressin hypodermically which on account of the cost was replaced by pitressin nasal jelly. The latter, due to its cost and somewhat unsatisfactory results, was in turn replaced by posterior pituitary powder intranasally with excellent results. However, anaphylactic reactions occurred until desensitization was accomplished. The daily use of pituitary powder maintains continuous desensitization so that further anaphylactic reactions are prevented.

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THE USE OF HEAT IN GENERAL PRACTICE*

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Heat is probably man's oldest remedy. The use of heat has been constant down through the ages and so today heat is one of the most commonly used physical measures in the practice of medicine. The fundamental principles underlying its use are quite simple; with proper understanding of them the results following the use of heat are far superior to those obtained where heat is used empirically.

PHYSIOLOGIC EFFECTS:

Heat has two important physiologic effects:

1. INCREASE IN BLOOD SUPPLY.
2. SEDATION.

An increase in the blood supply to the part fol-

*Read at the annual meeting of the Medical Society of Virginia, at Virginia Beach, October 6-8, 1941.

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lows the use of moderate amounts of heat given over a fairly long period of time. Intense heat given even for a short period may result in passive congestion rather than in the desired active hyperemia.

Sedation results from the fatiguing of sensory nerve endings in the skin, frequently referred to as counter-irritation. Relaxation of spasm in skeletal muscles also follows the use of heat and contributes to the relief of pain.

SOURCES OF HEAT:

The sources of heat may be classified as those producing:

1. SUPERFICIAL HEAT.
2. PENETRATING HEAT.

In the first group are those which produce heat on the surface with little or no increase in temperature in the underlying tissues. Here we find all the time-honored sources such as the sun, fire, hot stones, hot water, the hot water bottle, melted paraffin, and steam. Also in this group are some of the more recently developed forms: the electric heating pad, chemical heating pads, electrically heated blankets and jackets, infra-red lamps and generators, and so on.

In the second group are the electrical machines generating high frequency currents which are capable of producing a very distinct rise in the temperature of underlying tissues. The use of these currents dates back to less than half a century. There has been and continues to be a great deal of progress in the mechanical and practical aspects of this field.

ABSOLUTE CONTRAINDICATIONS TO THE USE OF HEAT:

1. ACUTE TRAUMA WITH EXTRAVASATION OF BLOOD.
2. INADEQUATE BLOOD SUPPLY, ACUTE OR CHRONIC.

In acute trauma with extravasation, the local application of heat will increase bleeding into the tissues; however, general application of heat may be required as a supportive measure to combat shock.

In sudden arterial occlusion or in advanced arteriosclerosis there is an organic insufficiency in blood supply; the local use of heat will increase the demand for blood; due to the pathologic condition this demand cannot be met so the net effect is to make a bad matter worse. On the other hand, application of heat elsewhere on the body may result in a reflex increase in circulation in the affected extremity as long as there is any unobstructed collateral circulation present.

Edema calls for the judicious use of heat. The blood supply in an edematous area is relatively poorer than in a similar normal area; therefore, the amount of heat used should be moderate and the period over which it is given should be long in order that an active hyperemia may have time to develop. For example: in the treatment of an arthritic knee where there is considerable effusion, gentle to moderate warmth applied for an hour is more effective that intense heat for twenty minutes. It is a safe rule that moderate heat over a long period is better than intense heat applied for a short period.

INDICATIONS FOR THE USE OF HEAT:

SUPERFICIAL HEAT:

- Arthritis of smaller joints
  - Hands and wrists
  - Feet and ankles.
- Common cold.
- Headache.
- Joint sprain.
- Muscle sprain (Myositis)
  - Neck
  - Shoulder
  - Back
  - Extremities.
- Superficial infections
  - Furuncles and abscesses
  - Painful incisions
    - Infected wounds
    - Perineal repair.
- Tenosynovitis.
- Toothache.

PENETRATING HEAT:

- Anuria.
- Angina pectoris.
- Arthritis.
- Bell's palsy.
- Bronchitis.
- Bursitis.
- Carbuncles.
- Cellulitis
  - Lymphangiitis and lymphadenitis
  - Salpingitis.
- Delayed union of fractures and fractures.
- Epididymitis.
- Myositis
  - Wry neck
  - Low back pain.

Neuralgia and neuritis.
Pneumonia.
Prostatitis.
Peripheral vascular disease
  Thromboangiitis obliterans
  Arteriosclerosis
  Reynaud's disease.
Renal disease
  Nephritis
  Pyelitis
  Cystitis.
Sinusitis.

The above lists are some of the more common indications for the use of heat. Obviously, many of the conditions listed under penetrating heat may be treated with superficial heat if the former is not available.

A brief consideration may well be given to the various sources of heat with particular attention to their virtues and their faults.

SUPERFICIAL HEAT:

The *electric heating pad* is perhaps the least effective source of superficial heat. This widely used device is subject to a great deal of variation in the amount of heat produced. Burns are not infrequent when the patient becomes too enthusiastic in its application. The possibility of electric shock is always present. Heat derived from this source is wholly superficial.

The ubiquitous *hot water bottle* is probably the most commonly used source of superficial heat. Its virtues and faults are too well known to require discussion here.

Hot water and *warm moist dressings* are frequently used sources of superficial heat. The universal availability of hot water makes this source a valuable one. Also, it is inexpensive, so that its lavish use does not constitute an economic problem. In applying warm moist dressings or in having the patient immerse the part in hot water a uniform distribution of heat is more likely than where dry heat is used. The buoyancy of water, in cases where the part is immersed, aids materially in the early recovery of active pain-free motion. The chief difficulty in the use of these agents is the rather constant attention required to keep the water at the proper temperature. Another limiting factor is tissue softening or maceration which may follow continuous application.

Chemical heating pads are a recent development and appear to be rather reliable. They are not likely to produce burns and they will maintain their temperature fairly evenly for several hours. Available in two or more different shapes and being independent of electrical current, the use of these pads is quite varied. It must be realized, however, that their heat is purely superficial.

Thermostatically controlled, electrically heated blankets and jackets are one of the very recently marketed sources and should find a large sphere of clinical acceptance. With good thermostatic control, an electric blanket would be most helpful in a variety of uses; for example, in the post-operative care of a patient the use of this device would assist materially in combating shock; in a sanatorium where it is desirable to have the patient sleep in the open, such a blanket to provide a light cover with dependable insulation from cold would prove effective; and, finally, provision of a constant temperature for cases with peripheral vascular disease is a field where the blanket should prove its worth. Electrically heated jackets are the clinical adaptation of the aviator's heated suit. Available in suitable shapes and sizes to conform to the various areas of the body, such a device provides a safe, even, superficial heat for long periods of time without discomfort to the patient.

Infra-red lamps and infra-red generators are readily available and provide a most excellent source of superficial heat. Many home devices may be used as efficient infra-red lamps: the common bathroom heater, a student's lamp with a high wattage bulb, or one of the numerous types of metal reflectors sold in drug stores for use with photoflood bulbs will function well when used at a comfortable distance for thirty to forty-five minutes twice or three times a day. In office practice or hospital work the larger infra-red lamps are preferable because of the higher intensity and generally greater adaptability. No infra-red lamp is capable of producing heat deep in the tissues. The lamps that give off considerable luminous radiation (tungsten filament) are richer in the slightly more penetrating infra-red radiations than are the infra-red generators (resistance coil elements). The latter source gives rise to radiations that are completely absorbed at the skin surface and, therefore, produces a greater sensation of heat.

Paraffin baths are a simple and easily constructed means of applying heat to any part that can be immersed. They consist of a kettle of suitable size

plus enough paraffin, usually about eight pounds, to cover the part. The bath is placed over a stove and heated until all the paraffin is melted, then it is allowed to cool until a thin film of wax forms over the surface; at this time the patient immerses the part to be treated and keeps it in the bath for thirty minutes. A very marked hyperemia follows the use of such a bath and, although this hyperemia fades within an hour, the treated part continues to perspire freely for three or four hours. The paraffin is removed from the part immediately following the treatment and is returned to the bath; thus the same wax is used repeatedly.

With the exception of the electrically heated blankets and jackets, all the devices named above are readily available and may be successfully used in the home as well as in the hospital or office. For the most part they are not expensive to obtain or to use; however, to get the most efficient response from their use they should be as definitely prescribed as any other form of medicine. The patient should be told what form of heat to use, what intensity of heat, the length of each treatment, and how often to repeat the treatment.

PENETRATING HEAT:

The original type of apparatus for producing high frequency currents was the *spark-gap diathermy machine.* The heat derived from such a machine is more intense at the surface and progressively less in the deeper tissues, but, withal, a very definite increase in deep tissue temperature results. The main disadvantages in this type of deep tissue heating are the time and skill required to apply the electrodes directly to the skin, and the fact that the deep heating in obese patients is not as great as in thin individuals because of the thick layer of adipose tissue in the former.

Short wave diathermy, making use of the vacuum tube instead of the spark-gap, is the modern method of supplying medical diathermy. It is called short-wave diathermy because of the fact that the wave-lengths generated are shorter than those used in spark-gap diathermy. There are two principal ways in which to apply short-wave diathermy: one is by utilizing an electrical field—using pads, cuffs, or air-spaced electrodes; the other method is to make use of an inductance cable wrapped around the part or laid over the part in the form of a flat disc or pancake. This latter method utilizes the electromagnetic field which is set up around the cable by virtue of the fact that an electrical current of high voltage and high frequency is flowing through the cable. Either method produces satisfactory deep tissue heating if properly applied. The inductance cable is simpler to use and the likelihood of improper distribution of heat is less than with pads or cuffs. Burns are possible with all forms of diathermy machines.

The employment of medical diathermy in the home is not a common practice because of the difficulties involved, namely, the size and weight of a machine, the special care and training necessary for its intelligent use, and the dangers attendant on its use where constant supervision is not possible.

In a well-equipped physical therapy department there are other sources of heat in addition to those already listed; however, time does not permit of an extended consideration of this phase of the subject.

SUMMARY AND CONCLUSIONS.

Heat is one of the most commonly used physical measures in the practice of medicine. The physiologic effects of heat are: (1) an increase in blood supply to the part, and (2) sedation due to the relief of pain. The sources of heat fall into two large groups: (1) those which produce superficial heat, and (2) those which produce penetrating heat. The only absolute contraindications to the use of heat are acute trauma with extravasation of blood into the tissues and conditions where there is an organic insufficiency in blood supply. Heat may be used with benefit wherever there is:

INFLAMMATION,
INFECTION,
TISSUE REPAIR in progress,

so long as it is used with care and understanding of its physiologic effects. Heat is never a complete therapeutic regime when used alone but it must be considered as a *valuable adjunct* to other forms of treatment. The choice of the type of heat to be used depends primarily on the condition to be treated; secondarily, on the availability of an effective source. Finally, heat should be definitely prescribed; the patient should be told

What form of heat to use,
What intensity of heat to use,
The length of each treatment, and
How often to repeat the treatments.

Norfolk General Hospital.

REPORT OF A CASE OF NASAL MYIASIS DUE TO A BOT FLY LARVA (*Cuterebra* sp.)

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A white woman, aged 36, reported that while working in the garden of her home in Arlington County, Va., about noon on July 8, 1941, she suddenly felt a sharp sting as though by an insect in her right nostril. The sting was so painful that she gave a sudden sharp inhalation which was followed by a profuse watery secretion from the nose and some coughing.

About 7:00 P. M. that evening a severe tickling in the nose was followed by a paroxysm of sneezing. This continued for twenty-five or thirty minutes. There was a little discomfort during the next two days, followed by slight pain and a feeling of pressure in the right side of the face, combined with an intermittent desire to sneeze. There was, however, comparatively little actual sneezing.

On Saturday, July 12, she went to the ocean and the salt air gave noticeable relief during the three-day stay. The pressing sensation then returned and lasted through July 17.

On July 18 violent pains were felt in the right side of the face, extending into the throat, shoulders, and back. A cold compress gave temporary relief. The same day she consulted her family physician. He referred her to a nose and throat specialist who made an examination of the nasal passages which he reported as negative for any foreign substance. At this time the nasal passages were irrigated. On July 19 she again visited the nose and throat specialist and again the nasal passages were examined and irrigated; no foreign substance could be found.

At this time it was thought that the pains in the head might be caused by an infected molar tooth and she was referred to a dentist on July 19 for x-ray and further examination. An x-ray of her teeth revealed no impacted wisdom tooth or other pathological condition. While in the dentist's office she felt a tickling in the region of the antrum and had a violent paroxysm of sneezing and expelled what appeared to be the larval or maggot stage of an insect. It was alive when brought to the senior author on the same day.

Between July 19 and 24, the patient improved insofar as the pain in the head, back, and face was concerned, but the uncomfortable feeling of pressure continued. She complained of a throbbing sensation in the region of the antrum when she leaned over. About July 22 an x-ray was taken of the head which showed some cloudiness in the region of the antrum and ethmoid sinus. On Thursday, July 24, about 7:00 A. M., she had a severe hemorrhage from the right nostril which was followed by several smaller hemorrhages over the next four days. The blood was not examined for larvae. The uncomfortable feeling over the antrum and right side of the face diminished with each hemorrhage. The patient was not accustomed to smoking, but on July 26 she smoked several cigarettes and this seemed to give her some relief.

The specimen expelled was a grayish, spiny larva about 6.5 mm. in length by 1.4 mm. in width (see Fig. 1). It was in the first larval stage but had

Fig. 1.—*Cuterebra* sp. Lateral view

grown so that it was about ready to molt to the next larval stage. It was submitted to Mr. E. F. Knipling, of the Bureau of Entomology and Plant Quarantine, a specialist in dipterous larvae, who identified it as belonging to the genus *Cuterebra*. This group of large flies, commonly known as rabbit bots, is parasitic in the larval stages on rabbits, squirrels, mice, and other rodents. Little exact in-

formation is published on the biology of flies of the genus *Cuterebra*. The larvae usually occur singly as subdermal parasites in a cyst, with an external opening in the skin for breathing. It is usually supposed that these flies deposit eggs on the hair of the host, or around the nest, and that they hatch and the larvae burrow directly through the skin, or are swallowed, and ultimately reach the subdermal tissues. Inquiry and examination of the premises where the infestation occurred elicited the information that wild rabbits, squirrels, chipmunks, and field mice were present, some of them being seen in the yard.

A distinctly related species, the sheep nose bot (*Oestrus ovis* L.) not infrequently infests the eyes and nose of man. This species deposits masses of minute active larvae.

This is the first instance known to us in which one of the bots of the genus *Cuterebra* has infested man.

INFECTIOUS DISEASES AS A CAUSE OF DIABETES INSIPIDUS

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The occurrence of diabetes insipidus on an inflammatory basis has been progressively increasing. In an admirable review of the literature, Fink[1] found that of 107 cases of diabetes insipidus 63 per cent were due to tumor and 25 per cent to inflammatory disease, the remainder being either post-traumatic or undetermined.

The infectious types lend themselves to division into four main diseases—encephalitis, syphilis, tuberculosis and actinomycosis.

The increasing frequency of the incidence of diabetes insipidus in association with *epidemic encephalitis* is attested to by the reports of Hall,[2] Whitehead and Darley,[3] Moore and Cushing,[4] *et al.* In the brain of ten cases of epidemic encephalitis studied by Eaves and Croll, it was found that those cases at necropsy which showed complete chromatolysis in the hypothalamus had not been, in clinical retrospect, associated with diabetes insipidus; while those brains in which only post-encephalitic inflammatory reactions were detected had come from patients with diabetes insipidus. This led many investigators[3] to believe that the condition is due to an irritative lesion in that part of the brain, rather than to a destructive lesion. This may be explained on the basis that the hypothalamus exerts an inhibitory effect on pituitary gland which is accentuated by a slight lesion but destroyed by a severe one. It is conceivable that post-encephalitic changes may include a fibrosis of glial tissue surrounding the hypophysis; but there is not much evidence in support of this.

Roehm[5] has reported a case wherein, on the seventh day after vaccination, polyuria and polydipsia commenced suddenly, together with fever, headache, chills, irritability, emotional rages on the least provocation and markedly exaggerated tendon reflexes. Other cases of post-vaccinal encephalitis with urinary symptoms have occurred,[6] requiring that this form be considered as an etiologic contribution.

Syphilis, congenital or acquired, is an important etiologic factor. In Fink's analysis,[1] 13 per cent of all the cases were of luetic orgin. These form more than half of the cases on an inflammatory basis. According to Hall,[2] one-third of all cases of syphilitic meningitis may be expected to show polydipsia and polyuria. In his series, 12 out of 36 did.

In syphilitic cases, the type is either a gumma in the floor of the fourth ventricle, in the pituitary, or in the hypothalamus—or it is a process which sets up a basal meningitis or endarteritis with concomitant connective tissue proliferation.[7] With more accurate methods of diagnosis and more frequent employment of earlier and more effective treatment, this branch of the infectious etiology is disappearing.

Tuberculosis has been encountered in about 5 per cent of the instances of diabetes insipidus. The lesion appears to be a basilar tuberculous meningitis associated with a caseous nodule or tuberculoma in the infundibulum.[8] Often, in tuberculous meningitis with nodular tubercles in the brain, polyuria may be the only symptom.[1] The pathogenesis of the effect of such a lesion on water balance may be regarded along the same lines as those considered under encephalitis.

Finally, *actinomycotic abscesses* occurring in the

neighborhood of the pituitary have been reported to occur occasionally in true relationship to diabetes insipidus.[1] This suggests a predilection on the part of the ray fungus for the base of the brain. The inflammation resulting from this invasion inhibits the pituitary from exerting its normal checking action on the function of the kidneys.

It should be noted that diabetes insipidus may appear during convalescence from any of the acute infectious diseases—e.g., measles.[9] However, these are transitory and of little importance.

In the course of this discussion, numerous sites of pathology and varied mechanisms of disturbed function have been alluded to, but none dogmatically accepted. This is in conformity with the present knowledge of the subject. The evidence from the standpoint of the morbid anatomist and experimental pathologist is that the pathologic lesions associated with diabetes insipidus are varied in character and distribution and are related to an interdependent pituitary - infundibulum - hypothalamic complex, rather than any single factor.

This physio-pathology in the brain must ultimately affect the kidney. Yet it must be remembered that the function of the kidney is under the influence of *three* factors—viz., (1) the kidney itself and its autonomic nerves, (2) a vegetative center in the tuber cinereum or hypothalamus, and (3) a pituitary hormone. In regard to the role of infectious diseases in this etiologic problem, it is interference with the second, and possibly also the third, which appears to be responsible for production of the symptom-complex-diabetes insipidus.

Summary

Infectious diseases are associated with one-fourth of cases of diabetes insipidus. In decreasing frequency, these are encephalitis, syphilis, tuberculosis, and actinomycosis—oddly enough, a viral, a protozoal, a bacterial and a fungal disease, respectively. The encephalitic factor is increasing, the syphilitic decreasing, the tuberculous constant, and the actinomycotic rare. Pathologically, these all produce characteristic inflammatory lesions in the brain—in or near the hypothalamus, infundibulum or pituitary body. Pathogenetically, all the lesions act similarly to the end that they cause a change in the influence of the cerebral neuro-humeral factors over renal function.

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SELECTED CASE REPORT OF MATERNAL DEATH

By THE MATERNAL HEALTH COMMITTEE,
MEDICAL SOCIETY OF VIRGINIA

Case Report

A 24-year-old white multipara (parity not stated) was not seen by a physician until after six hours of labor at term. Membranes ruptured spontaneously just before the arrival of a physician. A vaginal examination was done without gloves. Four hours later the pains were hard and another vaginal examination was done. A transverse presentation with prolapsed arm was then diagnosed, and another physician was called in to administer an anesthetic. Under chloroform anesthesia, an internal podalic version and breech extraction were accomplished with considerable difficulty. A large amount of force was required for delivery of the after coming head. The condition of the baby at birth is not stated, but we presume it was stillborn.

When the patient regained consciousness after the anesthetic, she complained of severe abdominal pain. The pain increased in intensity and *two days* later the patient was sent to a hospital.

The patient was admitted to a hospital with the diagnosis of peritonitis and ruptured uterus. Blood cultures—negative. Lochia culture—staphylococcus, B. coli, and non-hemolytic streptococcus. A stormy course followed and a septic temperature persisted. Sixteen days after admission a psoas abscess was incised and drained, and five days later a subdiaphragmatic abscess was drained. The patient was given transfusions (2400 cc.), sulfanilamide, and sulfathiazole. The course continued steadily down hill and the patient died six weeks after delivery.

Autopsy showed a ruptured uterus, generalized and pelvic peritonitis, subdiaphragmatic abscess, and fecal matter in the abdominal cavity from a rent in the bowel at the hepatic flexure.

COMMENT

It is felt that this is an obstetrical death and a preventable death. One factor contributing to the death is the absence of prenatal care apparently due to neglect on the part of the patient and her family. (There is no information before the committee which shows that prenatal care was not available.) Prenatal abdominal palpation would have shown the abnormal presentation so that arrangements for hospital confinement could have been made. (There is no evidence that a hospital was not accessible.)

The wisdom of attempting a version and extraction in the home for a transverse presentation may be seriously questioned. Version in transverse presentation, particularly sometime after the membranes have ruptured is often the most difficult and dangerous of obstetrical operative procedures. Under these circumstances the technical difficulties in the procedure are enormous and danger of a rupture of the uterus is an ever present hazard.

The presence of severe abdominal pain following such a procedure practically established the diagnosis of a ruptured uterus. An early removal of the ruptured uterus with an intraperitoneal application of a sulfonamide drug, combined with early replacement of blood loss by transfusions may have offered this individual a better chance for survival. The mortality in ruptured uterus increases with each passing hour, and after forty-eight hours have elapsed and peritonitis has developed operative intervention, except for the drainage of pus accumulations, is usually futile. Traumatic rupture of the uterus during labor is one of the most dangerous accidents of labor and always carries a high mortality, for even if the patients survive the immediate shock and hemorrhage, they frequently succumb later to infection, as did the patient under consideration.

Certainly after admission to the hospital, it seems that everything possible was done in an effort to save this patient. One member of the committee felt that the patient should have had a hysterectomy after admission to the hospital (two days after delivery), but the other members of the committee seem to feel that hysterectomy at that time, with obvious peritonitis present, would not have changed the outcome.

In summary then, this white multipara died from an infection secondary to a ruptured uterus, which was produced by a version and extraction on a transverse presentation. Antenatal examination or examination at the onset of labor would have detected the transverse presentation and would have indicated a hospital delivery. The diagnosis of a ruptured uterus shortly after delivery would have indicated an immediate hysterectomy. Because of these failures, it is felt that this should be classified as a preventable death.

Correspondence

Do You Know Your Nurse Maid?

University, Virginia,
November 29, 1941.

TO THE EDITOR:

Several physicians here have observed the following article which appeared in a relatively inconspicuous place in the *Charlottesville Daily Progress* and we feel greater publicity should be given it. One of the newspaper men of the Associated Press is going to publicize it pretty widely in the lay press, and I think the *Virginia Medical Monthly*, the *Southern Medical Journal* and the *Journal of the American Medical Association* will be glad to receive such a notice as this.

LAWRENCE T. ROYSTER, M. D.

CHIPS ABOUT CHARLOTTESVILLE

By the Chipster

Unbelievable as the following may sound, it came to us from such a source that we cannot doubt its authenticity.

If we failed to publish it, we would feel like criminals for not passing it along in the hope that

the family concerned will find out about it before it is too late.

It happened on a Charlottesville bus. A woman overheard two housemaids talking.

"How do you like your new job?", one asked.

"Oh," replied the other, "it's all right but they have a kid that cries all the time. I don't know what to do with it."

"Ha," said the first, "I do. They have one at my place too. But when it starts bawling, I just hold it over the gas range with the gas turned on but not lit. When it gets drowsy, I put it back in bed. That takes care of that".

One doesn't have to be a doctor to know that this procedure is bound to have a bad effect on the child —perhaps permanently injure the heart.

The lady who overheard the conversation is not a detective. So she did not get off the bus to follow the maid. She doesn't know in whose home she works.

Miscellaneous

Keep Working, Keep Singing—America.

It is difficult for most of us, as we go about our daily tasks, to realize how grave the challenges are that face our country—how vital the problems that must be solved, if we are to preserve those things we hold most dear—those things that generations have worked, fought and died for.

Yet each passing month underscores these grave realities.

And each passing day must find us more firmly resolved to preserve our hard won freedoms—come what may.

To this end America—and each of us individually —must accept a responsibility and an obligation as great as that which our forefathers faced during every critical period in the history of our country.

We must bend every nerve and sinew to produce.

We must be able to pit our power to create and build against the power of those who would tear down and destroy.

We must be prepared to match the physical strength of our system of free enterprise against the power of every other system.

These are the forces that created our freedoms—

the gospel of WORK
the doctrine of FAITH
the spirit of LIBERTY
the GENIUS that is AMERICA.

—they, alone, will preserve these freedoms now.

This country of ours didn't just happen. Generations of men and women worked here—free men—free women. With determination in their hands and songs in their hearts they built something.

Work blasted and hammered and axed a path through the wilderness. Work raised to manhood a new race of pioneers. Work tore from the raw rock the metals of industrial greatness. Work met and conquered the prairie blizzard and the desert sun. Work lifted the path of the iron horse across the High Sierras and flung rafters of steel against the sky.

Work and the will to work created the greatest nation on earth—and a way of life more bountiful and more generous than any other the world has known.

Work—the work of free men—of men and women who sing as they work as free men should—that was our past.

Today the battlefields on which our freedoms must be preserved include the assembly lines of Detroit—the blazing mills of Pittsburgh—the laboratories that seek and find—the harvest fields of the great Northwest—the plains of Texas—the railways that web the continent—the highways on which the nation moves.

Every man—every woman—every corporation in America has work to do. It is the sum total of this work—and the extent to which it is carried through —that will measure the future American way of life.

But—something more must follow along. With this work must flow the spirit of America. In this work must be the heart of America. Out of this work must come the free song of America.

. . . and so the House of Squibb, in its radio program from coast to coast says to the nation:—Keep Working . . . Keep Singing . . . America.

To remind America of its great responsibility—of its sacred heritage—of the necessity to leave no stone unturned to strengthen the character and defensive power of this our nation.

We hope that you who are a part of the House of Squibb will listen to these programs whenever you can. We hope you will believe in them and become a part of them. And if you believe in them, we hope you will go out and speak about them . . .to

your friends, the doctors and druggists . . . to every one you meet.

And we hope that you and they will be a continuing part of this program, raising your voices too, with strength and with conviction, saying:—

KEEP WORKING—KEEP SINGING—AMERICA.

LOWELL WEICKER,
President, E. R. Squibb & Sons.

Public Health Statistics

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for November, 1941, compared with the same month in 1940 and for the period of January through November, 1941, compared with the same period in 1940 follows:

	Nov. 1941	Nov. 1940	JAN.-Nov. 1941	JAN.-Nov. 1940
Typhoid and Paratyphoid Fever	52	36	318	258
Diarrhea and Dysentery	252	93	5,453	1,808
Measles	403	165	35,119	3,759
Scarlet Fever	317	294	1,474	1,584
Diphtheria	188	128	650	621
Poliomyelitis	29	47	148	230
Meningitis	5	6	97	69
Undulant Fever	3	2	15	22
Rocky Mountain Spotted Fever	0	1	32	46
Tularemia	2	0	22	40

VIRGINIA'S PNEUMOTHORAX PROGRAM

The pioneer efforts of the State Health Department to develop a statewide Pneumothorax Program in July, 1938, have resulted in the establishment of fifty-eight stations, manned by local physicians for the care of indigent pneumothorax patients.

No attempt has been made to start cases in the field, as it is believed that this procedure should be inaugurated in the sanatoria where special facilities and skilled staffs are better able to determine and institute the proper treatment for each individual patient. Approximately 600 patients are being treated by this service annually. This represents a real financial saving to the State, since a large percentage of these patients otherwise would be compelled to remain in the sanatoria, occupying beds badly needed for new cases.

In addition to the pneumothorax service, arrangements are made to care for major chest surgery at the two State-owned general hospitals and at certain private hospitals equipped to do this type of work. All candidates for surgery undergo preliminary study in the sanatoria before being admitted to the general hospital. This policy has two desirable features: first, the physician has the benefit of the advice of the internist; second, unsuitable cases are weeded out, thus saving the expense of admittance to the general hospital.

The development of this program has given new momentum to tuberculosis work in Virginia. It has made available the most modern, scientific, and hopeful therapy yet found for a large group of tuberculous individuals. From a public health standpoint, it has meant the conversion of positive to negative sputum, thereby reducing the number of infected contacts. Economically, it has meant a greater turn-over in sanatoria beds. For the patient, it has meant care at one of the local stations, shorter periods of sanatorium care and earlier return to family and work.

Every effort has been and will continue to be made by the State Health Department to limit this type of service to those unable to pay for it by a private physician.

Woman's Auxiliary
to the
Medical Society of Virginia

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Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

Wythe Auxiliary.

A meeting of the Woman's Auxiliary to the Wythe County Medical Society was held November 7th, at the home of Mrs. J. F. Repass, president, who presided. A report of the State meeting at Virginia Beach was given by Mrs. Erwin S. Berlin. We were most fortunate to have with us, again, our State president, Mrs. E. Latane Flanagan, who explained very interestingly the Constitution and By-Laws and the duties of the various officers. It was decided to bring a speaker on nutrition to Wytheville in the near future.

The officers of the Auxiliary are: president, Mrs. J. F. Repass; vice- president, Mrs. C. A. Michaels; treasurer, Mrs. B. L. Holladay; recording secretary, Mrs. Erwin S. Berlin; corresponding secretary, Mrs. C. D. Moore; parliamentarian, Mrs. Joseph E. Barrett; and historian, Mrs. Charles Fox Graham.

MRS. ERWIN S. BERLIN,
Recording Secretary.

Petersburg Auxiliary.

The Petersburg Medical Auxiliary entertained the members of the Camp Lee Medical Auxiliary at tea on Tuesday, November 25th, from 4 to 6 o'clock in the home of Dr. and Mrs. Wright Clarkson. Mrs. Clarkson and Mrs. Henry M. Snead poured tea. The house was beautifully decorated in chrysanthemums and each guest was given a corsage.

The Auxiliary volunteered as a group and individually to serve in defense work, the members making application for instructions in First Aid, which classes are expected to commence immediately.

MRS. J. E. HAMNER,
Chairman, Press and Publicity.

Mid-Tidewater Auxiliary.

The quarterly meeting of the Woman's Auxiliary to the Mid-Tidewater Medical Society was held on October 28th at the home of Mrs. E. L. W. Ferry at Millers Tavern. Mrs. Hawes Campbell, president, presided. After a short business meeting and reports from the various chairmen, Mrs. Flanagan, State president, gave much valuable information through her well-selected topic "This Job of Ours". Mrs. Reuben F. Simms, State treasurer, was also a guest and gave a report on the State meeting at Virginia Beach. Mrs. Campbell presented the Auxiliary with a silver vase which was won for the largest paid-up membership.

The following chairmen were appointed: Membership and Hygeia, Mrs. W. S. Cox; and Publicity, Mrs. Paul Pearson.

Following the meeting, the ladies were guests of the doctors at a turkey dinner.

(MRS. PAUL) VIRGINIA MCG PEARSON,
Publicity Chairman.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgement of receipt. However, we assume no obligation in return for the courtesy of those sending us the same.

Immunology. By NOBLE PIERCE SHERWOOD, Ph. D., M.D., F. A. C. P., Professor of Bacteriology, University of Kansas, and Pathologist to the Lawrence Memorial Hospital, Lawrence, Kansas. Second Edition. St. Louis. The C. V. Mosby Company. 1941. 639 pages. Illustrated. Cloth. Price $6.50.

The Toxemias of Pregnancy. By WILLIAM J. DIECKMANN, M. D., Associate Professor of Obstetrics and Gynecology, The University of Chicago; Attending Obstetrician, The Chicago Lying-In Hospital and Dispensary; etc. St. Louis. The C. V. Mosby Company. 1941. 521 pages. With fifty text illustrations and three color plates. Cloth. Price $7.50.

Synopsis of Genitourinary Diseases. By AUSTIN I. DODSON, M.D., F.A.C.S., Richmond, Virginia. Professor of Genitourinary Surgery, Medical College of Virginia; Genitourinary Surgeon to the Hospital Division, Medical College of Virginia; Urologist to St. Elizabeth's and St. Luke's Hospitals; etc. Third Edition. St. Louis. The C. V. Mosby Company. 1941. 302 pages. Cloth. Price $3.50.

Synopsis of Allergy. By HARRY L. ALEXANDER, A.B., M.D., Professor of Clinical Medicine, Washington University School of Medicine, St. Louis; Editor of The Journal of Allergy. St. Louis. The C. V. Mosby Company. 1941. 246 pages. Cloth. Price $3.00.

I'm Gonna Be A Father! By BOB DUNN (with a little assistance from his wife). Philadelphia. David McKay Company. 1941. Sixty-eight pages of cartoons. Cloth. Price $1.00.

Treatment of The Patient Past Fifty. By ERNST P. BOAS, M. D., Associate Physician, Mount Sinai Hospital, New York City; Chairman, Committee on Chronic Illness, Welfare Council of New York City; etc. The Year Book Publishers, Inc. Chicago. 1941. 324 pages. Cloth. Price $4.00.

The March of Medicine. New York Academy of Medicine Lectures to the Laity, 1941. New York. Columbia University Press. 1941. xiv-154 pages. Cloth Price $2.00.

Health Education in Relation to Venereal Disease Education, by MAURICE A BIGELOW. A Report on a recent important cooperative project between the U. S. Public Health Service and the American Social Hygiene Association. 32 pages, price 25 cents. Publication No. A330.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, $2.00. Single Copies, 25c.

VOL. 69. JANUARY, 1942. No. 1

Editorials

P.A.B.A. and Achromotricia

P. A. B. A. is the streamlined way of writing paraaminobenzoic acid, a member of the Vitamin B family. Achromotricia is a polysyllabic word for the loss of hirsutic pigment, a state of affairs commonly known as "turning gray". P. A. B. A. and achromotricia seem to be related.

The hopes of a great army of regretfully graying Americans were raised by Dr. B. F. Sieve's recent claims before the Society for Experimental Biology and Medicine at its New York meeting. Basing his conclusions on the experience of treating 300 persons with this new drug, he reported dramatic restoration of color to the hair when doses of from 100 to 600 mgm. daily of P. A. B. A. were given. He noted also that during such therapy pigment returned to the lesions of vitilego, that libido took a jump, sterility and impotency retreated, and even the asthmatic wheezed less often. If all this be true, public kudos may ultimately go to P. A. B. A., and the reigning house of the sulfonamides may tremble for its supremacy in popular esteem. It may well be that the desire for the preservation of pigment in hair and skin, the sex urge, and the procreative faculty takes precedence in the minds of mortal men and women over their desire for life itself.

Make Haste Slowly

A SYNTHETIC estrogen of high potency, low toxicity, orally effective, has long been a desideratum of physicians interested in the therapy of the menopause, amenorrhea, migraine and other related deficiencies. Because of the published accounts of the clinical efficacy of *stilbestrol,* doctors were beginning to believe that they might shortly lay aside the hypodermic syringe in favor of a cheap and potent tablet. While they hesitated for better knowledge of optimum dosage, toxic effects, and comparative strength of the product with the known natural estrogens, *Hygeia* proclaimed the virtues of the synthetic estrogen, and the *Readers Digest* raised the hopes of thousands of menopausal women by a glib account of its virtues. It is to be hoped that physicians who yield to the importunities of patients whose knowledge is derived from the public press will bear in mind the toxic manifestations of this synthetic drug when used in large doses and will remember that the results of wide clinical usage have yet to be assembled and evaluated.

Popsy

BY a happy conspiracy of the Flexners, father and son, we have now a definitive biography of William Henry Welch. The senior author, Dr. Simon Flexner, was first a pupil, then an assistant of Welch's in pathology at the Hopkins and later as Director of the Rockefeller Institute for Medical Research enjoyed a lifetime association with him. The junior author, James Thomas Flexner, formerly a journalist, will be remembered for his recent popular book, *Doctors on Horseback*.

The Flexners in this book, unemotional and restrained in its language—possibly in this way best reflecting the character of its subject—bring us step by step, steadily but never tediously, from the unostentatious entrance to the equally unostentatious exodus of this commanding figure in the heroic age of American medicine. We follow the motherless child of a country doctor through the resolution of his adolescent conflicts, his college career at Yale, his medical education at the College of Physicians and Surgeons in New York, his *wanderjahr* in Europe, to his decision to make pathology a life-long profession. We learn of his early struggles with ideals and ambitions in New York City where he established the first laboratory of microscopic pathology in this country, his research in pathology there and in Europe, and his call to the professorship of pathology in the then new Johns Hopkins Medical School. We are given an insight into the tremendous range of activities into which his vast energy was poured from that time on. He presided for years over the Board of the Rockefeller Institute for Medical Research, he contributed to the health of the nation as President of the Maryland Board of Health, as Director of the School of Hygiene at the Hopkins, as President of the National Tuberculosis Association, and as President of the National Committee for Health Hygiene. He served in World War I as adviser to the Surgeon General. He was chairman of the International Commission which met after the war at Cannes to create an International League of Health. His final efforts were made as Director of the Institute of Medical History at the Johns Hopkins.

Those admirers of Dr. Welch who expect to find in this biography a philosophical estimate, and those sentimentalists who desire the sort of hero worship which in our opinion too often spoils otherwise good biographical material, will be disappointed . This is a straightforward factual account of a man of action who kept his own counsel, had few intimates after a misunderstanding with his best friend, shunned religious conformity after early efforts to defend a fundamentalism were supplanted by European humanism, who had difficulty deciding on a career but in the end could claim first rank among American contributors to medicine. The book is written by members of a very intellectual family whose education and mental endowments were in many instances equal to Dr. Welch's own, and they are more interested in telling what he did than in telling what it meant.

Welch's foibles, his lack of order, absent mindedness, procrastination, self-indulgence, and personal lawlessness, form an almost comic backdrop to the magnificent endowments of heart and mind that set him on a pinnacle. His conversational ability, his gift as a clubman to attract and hold all types of men by his charming personality, his power as a public speaker, his ability to sell his ideas in markets that brought the highest price to the cause for which he pled, his European experience, his very appearance, all contributed to make the Welch who has become almost a legendary figure though dead such a short time. That he was offered the Presidency of Johns Hopkins University, that it was urged upon him for more than a year and that he continued to refuse it, is an interesting commentary upon the man who came to his eightieth birthday showered with many honors, decorations and medals and no less than eighteen honorary degrees.

If one should attempt to find the contribution of Welch to the Hopkins and to American medicine one would not find it chiefly in the fields of pathology and bacteriology which claimed the best of his earlier years though in both he made commendable contributions. Nor would one find it in the domain of public health or of medical history, though in both he was a pioneer and organizer. One would find it in his medical statesmanship. He was a man whose imagination and field of activity embraced vast expanses of virgin territory. He conceived of development, progress and accomplishment on a scale beyond the comprehension of the average man in a similar position. He brought Europe to America at a time when Europe had much to give America.

The reader who did not know Dr. Welch in the flesh will be left wondering by this biography why he was called "Popsy". Perhaps he looked the part, but such terms of endearment would seem to call for

a more intimate contact between student and teacher than apparently existed between Dr. Welch and the young men of John Hopkins. Except during the early years of his professional life his contacts with students were not frequent, familiar or fatherly. Certainly in his later years when this term seems to have come into general use, he was too busy with matters of transcendent importance to give more than fleeting attention to his professorial duties. "Popsy" was an appellation more frequently on the lips of older associates and practicing physicians who were his admirers than on the lips of students. This book produces no evidence to show that Dr. Welch was the same sort of idol for the young undergraduates that his confrere, Dr. Osler in the chair of medicine, proved to be. Nevertheless he is as much a part of America's great medical tradition.

Progress

IT NOW looks as though Virginia may get her medical examiners within a reasonable length of time. The Norfolk County Medical Society gave the necessary impetus to the movement. The Medical Society of Virginia acted favorably upon the suggestion of its component society. The legislative committee was promptly instructed to take the necessary steps to put the Society's wish into operation. Dr. Dean Cole, the vigorous and far-sighted chairman of this committee, is now actively at work, and results are expected.

Your Country Calls

WAR! Registration of all men up to sixty-five years of age, and for service registration of those up to forty-five years is now provided for by law. The Procurement and Assignment Service for Physicians, Dentists, and Veterinarians, established by Executive Order on October 30, met with the committees on preparedness of the medical, dental, and veterinarian professions in Chicago on December 18, and planned the immediate enrollment of additional doctors in the Armed Forces of the United States. To facilitate the creation of an enlarged pool upon which to call, all who are ready to serve the nation should now fill out the accompanying blank and mail it at once to Dr. Sam F. Seeley. Estimates indicate that sixty thousand physicians are available for service.

Societies

The Southampton County Medical Society

Held its fall meeting on October 29th at Franklin. The following scientific program was presented: Urinary Tract Infections by Dr. Leroy Smith; Practical Points in Allergy by Dr. H. Charles Ballou; Otitis Media in Children by Dr. Morgan B. Raiford; Recent Advances in Medicine by Dr. R. L. Raiford; and a motion picture "Otoscopy in the Inflammations".

Attending physicians were dinner guests of the Raiford Hospital Staff, at which time Dr. B. A. Pope was honored with the following remarks, in commemoration of his forty-five years of medicine in Southampton County:

> "Dr. B. A. Pope, a native of Newsoms, returned to his home community after graduating from the Medical College of Virginia. During his years of medical service in his community he has reared and educated his family, instilling in his children his ideals of Christian living and leadership that he has followed throughout his life. In carrying on his medical activities, he has quietly gone about his work as an example of conscientious and unselfish service to all alike. He has answered countless calls for aid in which he knew that his returns would be only the appreciation of his kind and benevolent service rendered. We, the physicians of Southampton County, extend our best wishes to Dr. Pope and trust that he may have as many more anniversaries. We are unable fully to express our gratitude for having him as our neighbor, friend and fellow practitioner."

Williamsburg-James City County Medical Society.

At the last meeting of this Society, the following officers were elected for the coming year: President, Dr. A. M. Sneed of Toano; vice-president, Dr. E. T. Terrell, Jr., of Williamsburg; and secretary-treasurer, Dr. I. S. Zfass (re-elected), Williamsburg.

The retiring president, Dr. T. B. Henderson, presented each member of the Society with an attractively framed copy of the famous prayer of Moses Maimonides, the noted Hebrew philosopher and physician, who lived in Spain from 1135 to 1204.

The Society meets monthly on the second Friday, with the exception of July and August. For the past several months, the guest speakers have been Dr. J. Warren Sayre of Newport News who spoke on "Office Gynecology"; Dr. E. T. Gatewood of Richmond, whose subject was "Use of the Sulfonamides in Ear, Nose, and Throat Diseases"; and Dr. Frank N. Pole of Richmond who spoke on the "Management of Stone in the Ureter".

I. S. ZFASS, *Secretary-Treasurer.*

Lynchburg Academy of Medicine.

The regular meeting of the Academy was held December 1, at the Lynchburg General Hospital, with the president, Dr. Powell Dillard, presiding.

This was the annual business meeting with reports of the committees. The Academy again authorized $100.00 to be spent in the library.

Dr. John Hundley, Jr., automatically succeeded to the presidency, and the following were elected: Dr. S. H. Rosenthal, president-elect; Dr. Porter Echols, vice-president; and Dr. B. H. Kyle and Dr. J. W. Devine, Sr., to Board of Trustees for three years. The secretary will be chosen by the trustees at the January meeting.

A sound effect, color chrome movie, showing Vitamin B Deficiencies, was enjoyed by the members and numerous visitors who came in after the business session.

C. E. KEEFER, *Secretary-Treasurer.*

Richmond Academy of Medicine.

The annual meeting of the Academy was held on December the 9th, with Dr. W. B. Porter presiding. Reports were presented from the various committees and the election of officers was held. Dr. Beverley R. Tucker will succeed to the presidency at the first January meeting. Others serving with Dr. Tucker will be Dr. Arthur S. Brinkley, president-elect; Drs. Emmett H. Terrell and A. E. Turman as vice-presidents; and Dr. G. R. Maloney and William R. Jordan as new members of the board of trustees.

The usual Christmas dinner followed the meeting.

Roanoke Academy of Medicine.

The December meeting of the Academy was held on the 1st of the month at Hotel Roanoke and was in the form of a dinner meeting. Following the dinner, there were two guest speakers—Dr. Fletcher D. Woodward of Charlottesville, who spoke on "The Results of Treatment of Malignant Tumors of the Larynx, Hypopharynx, Nasopharynx and Sinuses", showing movies of his laryngectomy operation; and the other guest was Dr. W. Lowndes Peple of Richmond, whose subject was "The Results of Radium Treatment of Cancer of the Cervix".

Dr. Mortimer H. Williams is president and Dr. H. B. Stone, Jr., secretary of the Academy.

The Medical Society of Northern Virginia

Met at Front Royal on December the 9th, with Dr. J. B. McKee of Winchester, presiding. Dr. Dean Cole of Richmond, invited guest, spoke on "Pneumonia". Other speakers at this meeting were: Drs. O. W. Carper and L. K. Woodward of Front Royal, and Leslie N. Bell and J. B. McKee of Winchester. Dr. J. E. Harris of Winchester is secretary.

The Fourth District and Southside Virginia Medical Association

Held its regular meeting in Petersburg on December the 30th, with a good attendance. The meeting opened with a social hour at 2:30 p.m., and, after the business and scientific session, the members had dinner at Hotel Petersburg. Speakers on the scientific program were: Dr. W. Ambrose McGee, Richmond, whose subject was "Fetal Hiccoughs"; Dr. David C. Wilson, University, "The Early Diagnosis of Mental Disease"; Dr. A. M. Showalter, Christiansburg, "Professional Collaboration from a Medical Standpoint"; Dr. Wright Clarkson, Petersburg, "New Methods of Diagnosis and Treatment of Cancer of the Uterus"; Dr. F. B. Mandeville, Richmond, "Points About the Roentgen Examination of Brain Tumors That Every Physician Should Know"; Dr. Thomas Murrell, Richmond, "The Many Sided Problems of Acne"; and Lt. Col. Ernest T. Trice, M.C., Richmond, "The Physician's Responsibility in Local and National Defense".

Petersburg Medical Faculty.

At the annual meeting in November, Dr. J. Bolling Jones was elected president to succeed Dr. L. S. Early. Other officers are: vice-presidents, Drs. Fletcher J. Wright, Jr., and Henry M. Snead; secretary-treasurer, Dr. Wilbur M. Bowman (re-elected). The court medicale will be composed of the new president and the four immediate past presidents—Drs. L. S. Early, J. E. Hamner, H. M. Snead and Leta J. White.

The South Piedmont Medical Society

Held its semi-annual meeting in South Boston, on the afternoon of November the 19th, with Dr. E. E. Barksdale, president, of Danville, presiding. The program included the following papers: Our Lesson from Nature on the Control and Arrest of Pulmonary Tuberculosis by Dr. S. E. Hughes, Danville; Sulfanilylguanidine in Bacillary Dysentery—a Review of the Literature with Case Report by Dr. Ray A. Moore, Hampden-Sidney; A Report of 2,000 Cases of Blood Examination for Syphilis by Dr. H. J. Langston and Miss Evelyn Byrd, Danville; Obesity—Cause, Disability from, and Treatment—a Review by Dr. John Hundley, Jr., Lynchburg; and a Symposium on Orthopedics by Dr. Prentice Kinser of Danville on Treatment of Fractures of the Os Calcis, Dr. H. R. Bourne of Danville on Treatment of Fractures of the Skull, and Dr. C. E. Keefer of Lynchburg on Treatment of Fractures of the Femur. The discussion on the symposium was opened by Dr. R. V. Funsten, guest, from the University of Virginia.

Following refreshments at the home of Dr. W. C. Brann, and a banquet, Dr. R. A. Ross, guest from Durham, N. C., spoke on the Management of Prolonged Labor.

Dr. F. O. Plunkett of Lynchburg is secretary of the Society.

News

Dates Selected for the State Meeting.

The Roanoke Academy of Medicine has appointed Dr. W. L. Powell of that city as chairman of the Local Committee of Arrangements for the 1942 meeting of the Medical Society of Virginia to be held in Roanoke. Hotel Roanoke has been chosen as headquarters and the Council has selected October 5, 6 and 7 as dates for this meeting.

The Seaboard Medical Association of Virginia and North Carolina.

Held its forty-sixth annual meeting at Virginia Beach, December 2-4, with the president, Dr. Waverly R. Payne of Newport News, presiding. There were over one hundred fifty registered and the meeting was an excellent one. On the opening evening, Governor-elect Darden addressed a public meeting. Wilson, N. C., was chosen for the 1942 place of meeting and the dates selected are December 1, 2 and 3. Officers elected for the new year are: President, Dr. G. Erick Bell, Wilson, N. C.; vice-presidents, Drs. A. A. Burke, Norfolk; Joshua Tayloe, Washington, N. C.; John R. Hamilton, Nassawadox; and Joseph Smith, Greenville, N. C.; and secretary-treasurer, Dr. Clarence Porter Jones (re-elected), Newport News.

Southern Surgical Association.

At the annual meeting of this Association at Pinehurst, N. C., early in December, Dr. Barney Brooks of Vanderbilt University, Nashville, Tenn., was elected president for the ensuing year; Drs. Frank S. Johns of Richmond and Foy Roberson of Durham, vice-presidents; Dr. Alton Ochsner of New Orleans, secretary; and Dr. Charles A. Vance of Lexington, Ky., treasurer, the two last named being re-elected. Dr. Harry H. Kerr of Washington, D. C., retiring president, was named a member of the council, succeeding Dr. Harvey B. Stone of Baltimore, Md. It was decided to hold the 1942 meeting in Savannah, Ga., next December, dates to be announced later.

Married.

Dr. Arnold F. Strauss and Miss Marjorie Ware Spindle, of Norfolk, October 25.

Dr. Joseph Page Pollard, U.S.N., class of '39, University of Virginia Medical School, and Miss Mary Ruth Walker of Burlington, N. C., November 28, at the Naval Air Station, Pensacola, Fla.

Ordered to Army Duty.

Capt. Charles Henry Henderson of Norton and Lt. Herman Frank Oppleman of Richmond have been ordered to extended active duty by the Commanding General of the Third Corps Area. Capt. Henderson is stationed at Fort Belvoir, and Lt. Oppleman at MacDill Field, Fla.

Medical College of Virginia News.

Dr. P. N. Pastore, an alumnus of the class of 1934, will join the staff of the college January 1, 1942, as professor of otolaryngology. Dr. Pastore received his A.B. degree from the University of Richmond before entering medicine. He served two

years as an interne in the hospitals of the college and has been at the Mayo Clinic since 1936. In 1939 he received the M.S. degree in his specialty from the University of Minnesota. He has served sometime as a staff member of the Mayo Clinic.

The New Jersey Obstetrical Travel Club visited the obstetrical department of the college recently. Dr. H. H. Ware, Jr., associate professor of obstetrics and acting head of the department, acted as host to the visitors. The morning was spent in the hospital division with clinics in the afternoon. The visiting physicians were: Dr. Walter B. Mount, Montclair; Dr. Carl H. Ill., Newark; Dr. Nelson H. Bigelow, South Orange; Dr. Robert A. Mackenzie, Asbury Park; Dr. J. Carlisle Brown, Atlantic City; Dr. Edward G. Waters, Jersey City; Dr. S. A. Cosgrove, Jersey City; Dr. Arthur W. Bingham, East Orange; Dr. Raymond T. Potter, East Orange; Dr. Alfred Meurlin, East Orange; Dr. Everette L. Campbell, New York City, and Dr. Dan Geary, Morristown.

The United States Public Health Service has made a grant of $5,996.19 for the Saint Philip School of Nursing.

Dr. Wortley F. Rudd, dean of the School of Pharmacy, recently returned from an extended Southern trip.

Dr. Harvey B. Haag, professor of pharmacology, addressed the American Pharmaceutical Manufacturers' Association on the subject of *The Role of Pharmacology in the Development of Medicines,* in Washington on December 8.

Miss E. Louise Grant, dean of the School of Nursing, has returned from a four weeks' tour on a travel grant of the nursing schools of the country, including the University of Toronto.

Recent college visitors have been: President Charles E. Lawall and Dean Edward J. Van Liere of West Virginia University; Dr. Maurice B. Vischer, professor of physiology, University of Minnesota; Dr. George H. Whipple, dean of the University of Rochester Medical School; Dr. Harlan Horner, secretary of the American Council on Dental Education; and Dr. H. G. Grant, dean of the School of Medicine, Dalhousie University, with several of his associates.

Dr. C. C. Coleman, professor of neurological surgery; Dr. I. A. Bigger, professor of surgery; Dr. Harry J. Warthen, associate professor of surgery; and Dr. Frank S. Johns, professor of clinical surgery, attended the meeting of the Southern Surgical Association, Pinehurst, North Carolina, on December 9. Dr. Coleman presented a paper on *Treatment of Compound Fractures of the Skull* and Dr. Warthen spoke on *Gas Gangrene.* Dr. Frank Johns was elected vice-president of the Association and Dr. H. Page Mauck, professor of clinical orthopedic surgery, was elected to membership in the Association.

Dr. William B. Porter, professor of medicine, and Dr. I. A. Bigger, professor of surgery, attended the meeting of the Seaboard Medical Association at Virginia Beach. Dr. Porter read Dr. Bernard Kinlaw's paper at the meeting due to Dr. Kinlaw's untimely death.

Dr. Porter P. Vinson, professor of bronchoscopy, attended the annual meeting of the Alumni Association of the Mayo Foundation recently. His presidential address was *Traditions in Medicine.* Dr. Vinson also gave a paper on *Diagnosis and Treatment of Cardiospasm* at the meeting of the Calhoun County Medical Society, Anniston, Alabama, and another at the symposium on gastro-enterology at the University of Virginia on *Diseases of the Esophagus.*

Dr. C. C. Coleman, professor of neurological surgery, attended the meeting of the Seaboard Air Line Railway Surgeons' Association at Jacksonville, Florida, giving a paper on *Prevention of Infection of Acute Head Injuries.*

Alpha Omega Alpha honorary medical society presented Dr. Edward D. Churchill, John Homans professor of surgery, Harvard Medical School, on its annual lectureship. Dr. Churchill spoke on *Some Fundamental Principles Underlying Surgery of the Lungs,* in the Simon Baruch Auditorium. Following the afternoon lecture a banquet for new initiates was held at the Commonwealth Club.

News From University of Virginia, Department of Medicine.

A bequest of $13,432 has been received from Mr. William E. Hopkins, the income from which is to be used for the purchase of medical books and medical journals for the library and medical school.

The Twenty-eighth Postgraduate Clinic Sympo-

sium on Gastro-Enterology was held at the University of Virginia Hospital on Friday and Saturday, November 14 and 15. Lectures were given by Dr. Porter P. Vinson, professor of bronchoscopy, esophagoscopy and gastroscopy, Medical College of Virginia; Dr. Julian M. Ruffin, associate professor of medicine, Duke University; Dr. Chester M. Jones, clinical professor of medicine, Harvard University; Dr. T. T. Mackie, assistant clinical professor of medicine, College of physicians and Surgeons; Dr. Warren T. Vaughan, director, Vaughan-Graham Clinic, Richmond, Virginia; Dr. William Osler Abbott, associate in medicine, University of Pennsylvania.

Dr. Vincent Archer attended the meeting of the American Roentgen Ray Society at Atlantic City, New Jersey, on November 16. He was the chairman of the Scientific Exhibit Committee and a member of the program committee.

The Eighth Annual Postgraduate Course in Ophthalmology and Otolaryngology was given at the Medical School on the four days, December 2 to 5. Lectures were given by Dr. Frank B. Walsh, associate professor of ophthalmology, Johns Hopkins University; Dr. Derrick Vail, professor of ophthalmology, University of Cincinnati; Dr. Algernon B. Reese, attending surgeon, Institute of Ophthalmology, New York City; Dr. Edward A. Looper, professor if diseases of the nose and throat, University of Maryland; Dr. Eugene Landis, professor of medicine, University of Virginia; Dr. E. P. Lehman, professor of surgery, University of Virginia; Dr. Louis H. Clerf, professor of laryngology and broncho-esophagology, Jefferson Medical College; Dr. Karl M. Houser, professor of otolaryngology, University of Pennsylvania; Dr. H. B. Mulholland, professor of practice of medicine, University of Virginia; Dr. J. Edwin Wood, professor of practice of medicine; Dr. W. H. Pearson, orthodontist to the University of Virginia Hospital.

On November 25, Dr. Hugh Hampton Young, director of the Brady Urological Clinic, Johns Hopkins University Hospital, delivered an address before the Pi Mu Chapter of Phi Chi. He spoke on "The Problems in Prostatic Surgery" and "Some Hermaphrodites I Have Met and Operations Carried Out to Make Them Happy".

Dr. Edwin P. Lehman presented a paper before the meeting of the Southern Surgical Association in Pinehurst, North Carolina, on December 9-11, on the subject "Annular Pancreas As a Clinical Problem".

Congress on Industrial Health.

Industrial health is of greater interest to the people of this country now than at any time in its history, because of the vast amount of defense work which is being done. For this reason, the fourth annual Congress on Industrial Health, to be held in Chicago, January 12 and 13, should prove most timely and interesting. This is being sponsored by the American Medical Association and the meetings, which will be held at the Palmer House, will be open to physicians and others interested in industrial health, and there will be no registration fee.

Program for the meeting appeared in *The Journal of the American Medical Association* for December the 6th.

Dr. S. H. Rivers,

For sometime located at Calvin, has obtained a leave of absence for a year to look after industrial work for the Clinchfield Coal Corporation at Dante.

Laboratory Evaluation Study for Serology.

An evaluation study of serodiagnostic tests for syphilis for the approval of laboratories performing such tests in compliance with the requirements of the premarital examination law will be conducted sometime during the month of January. This study is being made again in compliance with Section (d) of the Premarital Examination Law which became effective August 1, 1940, and is as follows:

"Serological tests required by this section shall be made by the State Department of Health or by a laboratory approved for such purpose by the State Health Commissioner; serological tests used shall be such as are approved by the State Health Commissioner."

All laboratories operated privately by physicians, technician serologists, hospitals, city and county health departments are invited to participate in this study. Those laboratories desiring approval should communicate with the State Department of Health. The exact date, instructions, and other information pertaining to the evaluation study will be sent to all city, county, private, and semi-private laboratories wishing to participate in the study.

Dr. M. H. Mund,

Of Martinsville, is now in St. Louis where he is taking postgraduate work in diseases of the ear, nose and throat.

Dr. V. E. Lascara,

Who practiced for a time in Norfolk, later joining the Medical Corps of the Army, has been released from active duty and has joined the staff of the Central State Hospital at Petersburg.

1942 Essay Contest.

The Mississippi Valley Medical Society offers annually a cash prize of $100.00, a gold medal, and a certificate of award for the best unpublished essay on any subject of general medical interest (including medical economics) and practical value to the general practitioner of medicine. Contestants must be members of the American Medical Association who are residents of the United States. The winner will be invited to present his contribution before the next annual meeting of the Mississippi Valley Medical Society at Quincy, Ill., September 30, October 1, 2, 1942, the Society reserving the exclusive right to first publish the essay in its official publication—the *Mississippi Valley Medical Journal* (incorporating the *Radiologic Review*). All contributions shall not exceed 5,000 words, be typewritten in English in manuscript form, submitted in five copies and must be received not later than May 1, 1942. Further details may be secured from Harold Swanberg, M. D., Secretary, Mississippi Valley Medical Society, 209-224 W. C. U. Building, Quincy, Illinois.

Another Service for Dr. Riggin.

Governor Price has appointed Dr. I. C. Riggin, State Health Commissioner, as chief of Emergency Medical Services, with authority to organize Virginia communities against possible bombings and other disasters, dealing generally with the medical phases. Dr. Riggin designated Dr. William Grossmann, director of the Bureau of Communicable Diseases, as liaison officer to contact the various communities and he at once started upon this work.

National Social Hygiene Day

Will be observed throughout the country on February the 4th by meetings, radio broadcasts, and special publicity in newspapers and periodicals, as part of the fight against syphilis and gonorrhea and conditions favoring their spread. This year's theme is "Keep America Strong, Help Build Better Health". The American Social Hygiene Association, 1790 Broadway, New York, will be glad to assist local communities in the preparation of programs for the day.

Dr. Hugh C. Henry,

Richmond, has been appointed as a member of a committee which will prepare a history of American psychiatry for the American Psychiatric Association. It is hoped to complete the document by the centennial meeting of the Association in Philadelphia in 1944.

Dr. A. Wilson Brown,

First full-time venereal disease control officer for Richmond, recently resigned his position in this city to locate in Pocahontas.

Loss by Fire.

In a large fire at Mathews, the last of November, Drs. John R. Gill and N. D. Nelms were among those to suffer the loss of their offices.

Dr. John T. R. Sweeney,

Richmond, has been elected chairman of the City Democratic Committee for two years, succeeding Colonel Robert T. Barton, Jr., resigned.

Dr. Maxwell Edward Lapham,

Dean of the School of Medicine of Tulane University, has reported for active duty as a lieutenant commander in the United States Naval Reserve, to serve as assistant to the medical officer of the Eighth Naval District.

Dr. Lapham has many friends in this State who will be interested in hearing of him. He gave courses of instruction in obstetrics for over two years to practicing physicians in Virginia under auspices of the State Society, the University of Virginia and the Medical College of Virginia, later giving a similar course in obstetrics to physicians in Mississippi, after which he located in New Orleans.

Doctors Wanted—

This office is constantly receiving requests from various sections of the State for physicians. Those contemplating changes or on the lookout for locations might write this journal, 1200 East Clay Street, Richmond.

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Obituaries

Dr. Greer Baughman,

Long prominent as a physician and citizen in Richmond, died December 2nd, after an illness of several weeks. He was born in this city in February, 1874, and studied medicine at the Medical College of Virginia, graduating in the class of '97. Following this, he studied abroad and, upon his return became associated with the teaching staff of his alma mater where he had been professor of obstetrics since 1915. During the World War, he was attached to Base Hospital No. 45, with the rank of captain. He was a past president of the Richmond Academy of Medicine, a former vice-president and chairman of an important committee in the Medical Society of Virginia, one of the founders of Stuart Circle Hospital, this city, and identified with numerous medical and social organizations. He was also a former president of the Community Recreational Association and always took an active part in this civic work. He is survived by his wife and three children.

Dr. Sidney Lockhart Scott,

Prominent Fredericksburg physician, died suddenly at his home on December the 16th, of a heart attack. His health had not been good for several years, though he had kept up his work as far as possible. Dr. Scott was sixty-two years of age and had graduated in medicine from the University of Virginia in 1901. He served for a short time as lieutenant in the U. S. Navy, after which he took up private practice in Fredericksburg. He was interested in many civic affairs, being among the early advocates for establishing the National Battlefield Park there, and was an ex-president of that association as also of the local Chamber of Commerce. He was, too, a charter member and former president of the Kiwanis Club and a member of the Elks Lodge. Two children survive him.

Dr. John W. Bolen

Of Galax, for many years a member of the Medical Society of Virginia, died on November the 2nd, of coronary sclerosis. He was eighty-one years of age, and graduated from the Medical College of Virginia in 1885.

Dr. Vernon Leslie Litsinger,

Farnham, died on October the 14th of heart disease. He was fifty-eight years of age and a graduate of the Maryland Medical College, Baltimore, in 1912. He was an active member of the Northern Neck Medical Society and for a time was a member of the Medical Society of Virginia.

Dr. Don Creed Wills,

For many years a well known physician of Nelson County, died November the 23rd at his home at Arrington, at the age of sixty-eight. He graduated from the Medical College of Virginia in 1918 and was for a time a member of the Medical Society of Virginia. His wife and a daughter survive him.

Dr. Charles Joseph Sager,

Woodstock, died of cerebral hemorrhage on October the 24th. He was sixty-eight years of age and a graduate of the Medical College of Virginia in 1898.

Dr. Herman Henry Moore,

Retired physician of Markham, died October the 20th, at the age of sixty-one years. He was a graduate in medicine from the University of Toronto, Toronto, Canada, in 1908, and from the Detroit College of Medicine in 1909.

Dr. Casper Walker Jennings,

Well known eye, ear, nose and throat specialist of Greensboro, N. C., died at his home in that city on November the 22nd. He was forty-eight years of age and graduated from the Medical College of Virginia in 1916. He is survived by his wife and three children.

Dr. George Fordham,

Powellton, W. Va., died October the 4th, at the age of sixty-three, death being due to coronary occlusion. He graduated in medicine from the University of Virginia in 1907 and had taken an active part in medical affairs in his community, being a past president of his county medical society. He was also a veteran of the Spanish American and World Wars.

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VOL. 69. February, 1942 NO. 2.

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Roanoke, October 5, 6 and 7, 1942

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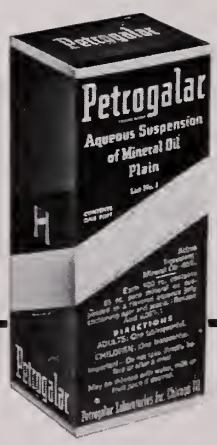

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RICHMOND, VA., FEBRUARY, 1942.

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Guest Editorial

The Role of the Medical Profession in National Preparedness

THE establishment of a Committee on Medical Preparedness by the House of Delegates of The American Medical Association at its meeting in New York in 1940 has given an opportunity to the members of the profession to make a needed contribution to National Defense and the preservation of individual liberty for which our democracy stands. Without any great head-lines or by-lines, without the promulgation of strikes, without bitterness, The American Medical Association and other allied organizations, including the dentists, the nurses, the pharmacists and the veterinarians, have followed a well-planned program and are now in a position to offer greater cooperation for national defense and to do so more effectively than has ever before been offered the armed forces in the history of the United States.

Such an undertaking in so far as the medical profession is concerned has been accomplished by the Medical Preparedness Committee of The American Medical Association in cooperation with many interested groups of physicians representing special societies and special organizations. A survey of the resources of the medical profession, made early in the present emergency, has furnished for analysis data concerning some 154,000 doctors of medicine in the United States. Of this number 62 per cent have signified their willingness to volunteer their services to the government when needed. The percentage of those willing to volunteer varies in different sections of the country, being above 62 per cent in some parts of the country and dropping as low as 40 per cent in others. It is important to know that a large majority have signified their willingness to serve, and we are confident that in the event of a greater emergency than now exists the response would be unanimous.

The medical needs of The United States can be determined according to the demands of the Army, the Navy, the Public Health Service, the Veterans Bureau, the Civil Service, Industry, and the Civilian Population. The supplying of these needs is a part of the responsibility of the medical profession. It is, therefore, evident that the procurement and assignment of physicians for these various services is a tremendous task. Fortunately the Medical Preparedness Committee has had the unselfish and hearty support of state chairmen and local committees in helping to determine community and other needs in working out this program. In undertaking such a tremendous job it stands to reason that it will not be possible to satisfy all interests in handling medical problems, yet it is necessary for all of us to realize that there must be individual and community sacrifices which are absolutely necessary in adjusting this program to the needs of the country. It means that physicians and hospitals must carry a greater load and that there be a more sympathetic understanding of these problems among the public.

To state briefly some of these problems: At the present time the United States Army includes approximately 90,000 officers, 6,000 nurses and 1,480,000 enlisted men. Of the 90,000 officers, approximately 14,000 and 109,000 enlisted men are in the medical department. Among the 14,000 officers in the medical department 11,465 physicians are in the medical corps. Of this number 8,963 are reserve officers, 1,250 belong to the regular army and 1,232 are members of the National Guard. The Army calculates that six medical officers are necessary for each 1,000 troops. On this basis at the present time there is a shortage of approximately 1,500 physicians for the Army alone. Should the Army remain at its present level there will be required within the next year about 3,200 physicians for replacements. Should the size of the Army be increased there would naturally be a proportionate increase in the demand for physicians. It is commonly believed that about two-thirds of the physicians who are now in the service would desire to remain for the period of the emergency.

The medical schools of the United States graduate each year approximately 5,000 physicians. These graduates enter class A hospitals for interne training before they are eligible for a commission in the armed forces. After completion of this training not all can satisfy the present physical standards demanded by the Army and Navy for commissions. These graduates then who physically fail to qualify are the ones who must be utilized in supplying the other medical needs.

The needs of the Navy at the present time are practically satisfied. This branch of the service requires 6½ physicians for each 1,000 of personnel. At the present time through an expanded medical service their needs are fulfilled and they will require about 100 physicians each year for replacements.

The needs of The Veterans Bureau, The Civil Service and Industry, can be supplied with some readjustment of personnel. The needs of The Public Health Service will be filled with more difficulty because of the expanding activities of this group in its relation to the protection of the health of communities deprived of physicians' services because of other demands.

Civilian needs are recognized as being of paramount importance particularly as these needs are found to exist in rural communities. In the Southern States many small towns are without adequate medical and hospital facilities for their inhabitants, because no one has made any plans for handling the situation and civilians seem to make only a minimum effort to remedy this situation.

Recently a board was appointed by The Office of Defense and Welfare Service under The Federal Security Administration, known as The Board of Procurement and Assignment of Physicians, Dentists and Veterinarians. This board hopes to procure on a voluntary basis personnel from the qualified practitioners of these groups to supply on an equitable basis the various types of service which are now and will be demanded because of the national emergency as declared by the President of The United States. All physicians will be asked to cooperate in this National Defense effort to a much greater extent than heretofore.

An effort is now being made to determine the actual needs of these various services and through established committees an effort will be made to see that every physician is assigned a role which he is most capable of performing for the benefit of our country in making effective the purposes which our forefathers had in mind when this Land of Liberty was established.

JAMES E. PAULLIN, M. D.,
Atlanta, Georgia.

OFFICE GYNECOLOGY—DIAGNOSTIC AND THERAPEUTIC PROCEDURES USED BY THE SPECIALIST WHICH ARE ALSO AVAILABLE TO THE GENERAL PRACTITIONER*

JAMES RAGLAN MILLER, M.D.,
Hartford, Connecticut.

Office gynecology has been well presented in book form, notably by Dr. Howard A. Kelly in his "Medical Gynecology" and more recently by Dr. J. P. Greenhill in his monograph entitled "Office Gynecology". Some of the latest discoveries and methods presented in such books turn out to be passing vogues of current thought. Some are even obsolete before the book is off the press. Fundamental facts and basic methods of diagnosis and treatment do not change so rapidly.

New discoveries should be evaluated in our teaching centers where critical analysis of results can be made before they are adopted for general use. So fascinating is the romance of the endocrines that the over confident writings of our less cautious research clinicians are used by high pressure drug house salesmen to convince the general practitioner that he should use this or that new method. Both specialist and general practitioner adopt methods which have not yet been shown to be valuable for general use, and at the same time neglect the much more difficult problem of accurate diagnosis.

I practice in a community where, to an unusual degree, specialism in medicine is well developed and clearly defined. It has been natural for me, therefore, to develop this topic of office gynecology with an emphasis on those procedures which specialists commonly employ and which I have found could be, but are not, made use of by the general practitioner.

Time will permit me to mention a few examples sufficient only to indicate points of view and attitudes of mind which I regard as fundamental to good medical practice. I believe that no patient should go directly to a specialist. On the contrary, I believe each patient should have his own general practitioner and that the resources of the specialist should be rapidly and easily available when the general practitioner feels the need of help which specialism has to offer. In general I feel there is no excuse for the existence of any specialist who does not offer more skilled diagnosis and therapy than is commonly at the command of the general practitioner. Specialism has suffered much justified criticism because diagnostic and therapeutic procedures are carried out when the general consideration of the patient as a whole would indicate that they are hardly justified.

I believe it was Maurice Richardson who said that the principal duty of a consultant is to make a rectal examination. I assume that more and more general practitioners are equipped for simple endoscopic examination. I assume that more and more general practitioners have microscopes and make use of them. I assume, also, that general practitioners are willing to take and record reasonably complete histories. I may, of course, be wrong in these assumptions, but I know that every graduate of a good medical school and of a good hospital interneship should be so prepared. That specialist is indeed fortunate who works among physicians who practice on this high level of competency.

Every practitioner meets the problem of sterility. Only a few of the special examinations required are not at his disposal. He can examine the husband's semen and can in most instances quickly determine if he is an adequate partner. Semen should be collected in a clean glass receptacle and not in a rubber sheath. The post-coital examination of semen in the vagina and cervix is very useful, however, when the husband refuses to submit to examination. Spermatozoa must be many, actively motile and must show a very low percentage of abnormal forms. In addition to the examination of a fresh specimen, a slide can also be spread and stained as is any blood specimen and this can be submitted, if necessary, to a specialist. As in animal husbandry, the male must be healthy. Low metabolism, allergic states and debilitating constitutional conditions are as important in the husband as in the wife.

One should analyze carefully the entire sterility problem: Is there (1) an impotentia coeundi—inability to effect intercourse, or (2) an impotentia fructandi—inability to produce active sex elements and allow them to get together, or is there (3) an impo-

*Read by invitation before the Medical Society of Virginia, at its annual meeting at Virginia Beach, Va., October 6-8, 1941.

tentia gestandi—an inability to carry to term a pregnancy which has started? It is obvious that effective treatment must be directed toward remediable defects and that these defects must be identified before treatment can be directed toward their correction.

The commonest failure of the general practitioner in handling a sterility problem, unless it be to disregard the husband, is to neglect the simple fundamentals in favor of the latest tricky procedures which he has learned from some high-pressure specialist or drug salesman. Of all the glandular extracts, thyroid is the only one which clearly has a place in this field and we should first determine if our patient has a thyroid deficiency. If so, this is easily remedied. In a sluggish, fat patient whose periods are scanty, it may be justifiable to try thyroid extract therapeutically, but I recommend the more accurate procedure of control by basal metabolic determinations.

If an insufflation test of the tubes or endometrial biopsy is to be done, care must be taken to avoid either procedure until all cervical and vaginal infections are cleared up. These procedures must be appropriately timed. Insufflation must be done during the first few days after the period and before the endometrium has begun to thicken, and the endometrial biopsy is useful in demonstrating presence or absence of ovulation only if it is done just prior to or at the beginning of menstruation. These facts should be kept in mind in referring patients to distant centers for detailed study of the sterility problem, for much time and expense can be saved the patient.

The general practitioner can solve a very large proportion of his sterility problems if only he is willing to do a little intelligently directed detective work. He will do well to eschew entirely all hormone therapy except thyroid. It is not yet clear that modern endocrine discoveries have given us anything of value for general use in the cure of sterility.

Dysmenorrhea presents a similar diagnostic problem. I am very much opposed to the use of hormone therapy for this condition, unless it is used in a frankly experimental manner. Most practitioners, and specialists, too, for that matter, have no business entering this experimental field. It is very expensive and perhaps harmful to the patient and it serves as an all too easy substitute for diagnostic study. Causes should be sought in the field of psychoneurosis, marital infelicity, abnormal sex life and allergy. Dysmenorrhea is frequently due to the same autonomic-nervous-system conditions which cause spasm of the bowel. On this basis, belladonna has long been a favorite though poorly tolerated remedy. I have had much satisfaction from novatropin gr. 1/24 every four to six hours at the onset of cramps or a day beforehand if possible.

The general practitioner, as well as the specialist, can make use of the recently developed treatment for pre-menstrual distress described by Greenhill and Freed, i.e., the administration of ammonium chloride 1 gm. three times daily and the restriction of sodium salts in the diet during the immediate pre-menstrual period.

Specialists often have referred to them for solution of the problem of vaginismus. The tricks which the specialist uses are available to any practitioner who has (1) a knowledge of the part that fear plays in causing this condition, (2) a knowledge of the action of the pelvic floor muscles and (3) patience and gentleness in conducting the examination.

The attitude of the patient with vaginismus is the attitude of defense, based on fear of being hurt. The pelvis is rotated backward as far as possible away from the feared cause of pain. The adductors of the thighs close to protect the region and the constricting muscles of the urogenital diaphragm and anus are tightly contracted.

The opposite to this situation is the attitude of defecation in the squatting position. All of the muscles of the pelvic floor must be fully relaxed if the object of defecation is to be attained, and we all know that the slightest pain-producing incident causes contraction of the whole sphincter group. We also know that opposing muscles, e.g., the biceps and triceps, cannot both function at the same time, and, furthermore, when one is in action the other is not only not in action but is in a state of reduced tone. So it is with the patient who, so to speak, clamps herself shut at the attempted examination. If we can get her to strain as at stool and concentrate on relaxing the anal sphincter, a process which is not accompanied in her mind by any sense of fear, we can get her to relax the entire set of muscles which are concerned with vaginismus. If, then, we gain her confidence by performing a rectal examination during which she should strain the rectum down over the examining finger, we will soon find it possible to make a vaginal examination—though with

a tight hymen cocaine application may be necessary.

I do not need to enlarge upon this line of treatment more than to say that it is very effective in over-coming many cases of dyspareunia and the method of getting the patient to strain down is useful in every pelvic examination that is made.

Dilatation of the hymen can be done easily under cocaine in the office. I have found graduated glass cone rectal dilators very useful for this purpose.

The blood sedimentation test is in almost daily use in my office. By this means I can with great accuracy rule out active infectious diseases and I am able to tell the earliest possible time when it is safe to operate on a patient who is recovering from a pelvic inflammatory process. The sedimentation rate is also rapid in recurrent malignancy, and a rapid rate will often point to an unsuspected pulmonary tuberculosis. This test is very easy to do, but I am constantly reminded that general practitioners do not appreciate its value, not only in gynecological cases but in many others.

The pessary is an instrument which I use in connection with retroflexion of the uterus more often for its diagnostic than for its therapeutic value. Is a patient's backache due to her retroflexion or to back strain? If the uterus can be placed in good position and held there by a pessary, we can soon eliminate the backache if retroflexion is its cause. More often it is not responsible and a useless operation is avoided.

There is not time to go into the subject of leukorrhea, but may I advise the use of the microscope as an indispensable aid in diagnosis and intelligent treatment. Gram stains of the urethral and cervical discharge can be examined for gonorrhea and yeast infections and a wet smear can be quickly checked for the presence of trichomonas organisms. I have found it very helpful to make the wet preparation in a drop of 1 per cent Safranin (the usual counter stain used in the Gram staining method) and I find it easy to identify the colorless unstained trichomonads in the midst of stained epithelia and pus cells.

I wish also to commend to your attention the knee-chest position as a method which helps in the examination of little girls, virgins and pregnant women. A speculum may not even be required to obtain a view of the vagina and cervix. In this position the vaginal walls are ballooned out so that application of disinfectant solutions and powders can be made more advantageously.

I have been astounded at the reluctance of the general practitioner to make use of the catheter. Certainly he, as well as the specialist, can examine, and also culture and stain sediment from bladder urine. He ought to be able to recognize easily a stricture of the female urethra and correct this ailment by dilatation with the male urethral sounds, with or without 10 per cent novocaine solution. I can recall several baffling problems that were solved by this simple procedure.

Dilatation of the cervix and sounding of the uterus is occasionally needed, especially after repair operations, cauterizations and after radium treatments for menorrhagia. I recall a very puzzling patient with arthritis who had undergone many of the treatments commonly employed for that condition, including a prolonged and very expensive sanitorium treatment. She came to me because of an irritating vaginal discharge. I learned that she had previously received a radium application for excessive flowing and suspecting a pyometra on the basis of cervical stenosis, I dilated the cervix in my office, not even requiring a local anesthetic. The vaginitis was quickly cured and the arthritis responded to the establishment of adequate drainage, just as it might have after removing a badly infected tooth, were that responsible.

I have no doubt that cauterization is extensively used by general practitioners and some comments may not be out of place. Three types of agents are employed, (1) chemicals, of which silver nitrate is an example, (2) the actual cautery such as the Pacquelin, or Post or nasal tip cautery and (3) the coagulating bipolar current. These agents vary in the order named in the depth to which necrosis of tissue is caused. All three have a so-called stimulating effect on the cervical epithelium, in the sense that the "burn" is rapidly over-grown by new squamous epithelium.

No active cauterization should be started until one is sure of these three things:

1. The absence of pregnancy.
2. The absence of cancer.
3. The absence of recent acute infection.

(1) Pregnancy may be interrupted if cauterization is attempted and the abortion may take place in the presence of infection which always follows cauterization. Hence the mildest measures, if any,

should be taken in the treatment of cervicitis during pregnancy.

(2) Concerning cancer, I need only say that the specialist who is to treat the cancer, and it is without doubt a specialist's job, should have an opportunity to see the lesion before it has had any treatment whatsoever. If there is any doubt *please leave the lesions alone.* Do not even put in a tampon unless that is necessary to stop bleeding. Care must be taken not to overlook a cervical cancer in the presence of pregnancy. These are rare, but we have two or three such cases each year in Connecticut. They are almost always early cases when they first come to the doctor, though he usually does not recognize them as such. When recognized, however, they are particularly favorable for treatment and they should be referred promptly to an experienced specialist.

The most common and the most serious mistakes which are made in cauterizing the cervix according to my observations are: To cauterize the cervix which harbours recent active infection or to cauterize too soon after childbirth or after previous cauterization or to cauterize the cervix on the surface of which many blood vessels are clearly visible. If such a hyperæmic cervix is cauterized, there may be severe bleeding at the time and even more severe bleeding two weeks later when the slough separates. Active cauterization causing any degree of necrosis should not be repeated oftener than every 4 to 6 weeks. This time is required for the healing process to recover from the previous treatment.

The inflamed and hyperæmic cervix can be treated easily and successfully if silver nitrate is used not oftener than once in two weeks, until such time as it is safe to use a more penetrating type of cauterization. During all this time an acid douche of vinegar, two ounces to two quarts of water, is very beneficial. Alkaline douches should be discontinued for the natural reaction of the vagina is strongly acid and this acidity is greatly increased during pregnancy, as it is one of the most potent protective mechanisms against infection. Ulcerations of the cervix and vagina can even be produced by keeping the reaction of the vagina on the alkaline side, producing the conditions found in the monopause which lead to vaginitis.

Rare though it is, the primary lesion of syphilis can be found on the cervix or in the vagina if the general practitioner is alert. When the male partner is known to have a fresh infection, his consort should be examined repeatedly and dark field examination should be made of any ulceration. These lesions can be found if they are looked for and it is to the general practitioner that we must look for their early discovery. He must realize that the examination of the blood for syphilis is not dependable at this early stage, but that treatment is most effective.

Cauterization of the cervix in the face of active infection has caused severe damage and even death. One of our local physicians made such a mistake by cauterizing a cervix in which he had one week previously recovered a positive smear for gonorrhea. His patient died on our ward one week after the cauterization, and autopsy showed sepis originating in the cervix.

I have this past year seen two similar cases of severe pelvic infections which followed cauterization of the cervix. In both of these there was already considerable endometriosis, and the combination of infection with endometriosis makes an extremely difficult one to handle.

Deep lacerations of the cervix are best treated by surgery. Fortunately today we see fewer of these than formerly and it is quite rare for us to perform operations on the cervix unless they are combined with other prolapse work. Concerning the retention or Nabothian cysts of the cervix, one is apparently justified in opening, evacuating and destroying the lining of these cysts by some suitable cautery. No great harm is done by so doing. Unless, however, these cysts are of considerable size, distorting the cervical canal and interfering with proper drainage, we cannot claim that we are doing anything really important for the patient. Retention cysts which line the cervical canal itself are best treated by conization or by surgery, for adequate cauterization of the canal in such instances is apt to produce stenosis. I well remember that in the early days of our postnatal clinic in the Hartford Hospital some of the cases were cauterized too deeply and too much, for later a few of them developed real stenosis of the cervix which led to serious dystocia.

The greatest service which cauterization of the cervix can do is to destroy early the pre-cancerous lesions about the external os. This is where the single layered cervical epithelium stops and the many layered stratified squamous epithelium of the vagina begins. This is where most cervical cancers originate and it is here that the prophylactic early treatment

of chronic lesions by cautery can actually prevent the growth of cancer, at least that is the present thought on the subject. Cauterization should not be employed as a treatment of cancer. If there is any doubt at all whether the lesion is malignant, consultation should be obtained with a pathologist, through the medium of a small section of tissue taken for biopsy.

Some wag once said, "There is nothing so uncommon as common sense". Perhaps the specialist is justified of his existence after all if he can bring this rare faculty to bear on the diagnosis of the individual patient.

179 *Allyn Street.*

DISCUSSION

DR. WAVERLY R. PAYNE, Newport News: I want to thank Dr. Miller for his very fine paper. It has brought to us some valuable points useful in everyday office practice. I was interested in the problem of cauterizing cervix in the office. I think all of us who have done these things often enough have encountered excessive bleeding, either at the time of operation or a few days later. It is more common in cases of marked hypertrophy or edema of the cervix. Extensive cauterization or conization of the cervix can be done better in the hospital, and, with the use of good anesthesia, bleeding can readily be controlled by sutures.

This entire paper is of practical value both to men in general practice and in the specialty, and I personally want to thank Dr. Miller for his kindness in appearing before our Society.

THE GYNECOLOGICAL HISTORY AND EXAMINATION*

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Richmond, Virginia.

This paper deals with the history taking and the examination of the office or clinic out-patient and gives the forms for such used in the Gynecology Out-Patient Clinic of the Medical College of Virginia.

I. *Remarks Concerning the History.*

One cannot wisely take a history of the behavior of one part of the body to the exclusion of the rest. The physician or student who most considers the patient's welfare and his own reputation will take a general history as well as a special history, even though the patient's chief complaint is of an apparent gynecological nature. This is desirable because there is an inseparable relationship between the genital system and other systems of the body; because many apparent gynecological conditions are in reality systemic or remote diseases, or even imaginary; and because it may be important to modify the treatment according to the ability of the patient as a whole to withstand the hazard of such treatment.

Though a patient has a retroversion of the uterus, backache may be of orthopedic origin, or urologic, or possibly due to a distant focus of infection. Though a patient has a cystocele, urinary disturbance may be due to tabes dorsalis; and amenorrhea may be due to pulmonary tuberculosis. Social or economic maladjustment may be the basis for many ill-defined gynecological symptoms, and marital incompatibility sends patients to the physician.

A detailed special history should be included in this general history. It should concern the age of the menarche; menopause; the frequency, duration, amount and character of the menstrual discharge; changes in rhythm; amenorrhea; the date of the last period and of the period before last; dysmenorrhea; intermenstrual bleeding; leucorrhea, its amount, color, odor, and whether it causes itching. The past operative and obstetrical history should be obtained, giving the character of the operation, the number of pregnancies, their dates and outcome and the character of labor and convalescence. It is often desirable to inquire into the sexual history in regard to the frequency and dates of coitus; to the presence of libido, of dyspareunia; to the use of contraceptives. A detailed urinary history is desirable.

The taking of gynecological history often requires great tact. Many times the patient's real complaint is of such an intimate nature that to her it is embarrassing and not readily elicited. In such a case the patient may substitute another complaint. If the patient seems embarrassed, hesitant, or unsatisfied, it is well to pursue tactfully the history further or ask frank and pointed questions. It is rarely desirable to have a third party present when the gynecological history is being taken, but during the examination the presence of a third party is usually desirable.

*From the Department of Gynecology of the Medical College of Virginia.

The history will not only aid in finding the disease, if any; but it should also determine if fear is present. It is probably safe to say that many patients who come to the doctor are frightened in one way or another, and sometimes the fear is of greater magnitude than the disease itself. This fear may be specific, as the fear of venereal disease or of cancer, or ill-defined as a general sense of alarm. Often no one is so well fitted to reveal this fear as the doctor, and often no one is so well fitted to dispel it as he.

In practice the use of a printed history form is a matter of individual preference. When an assistant or a student takes the history such a form is desirable in order that information desired by the physician will not be omitted. However, it is preferable for the physician to take the history himself. In this case he may follow a mental form rather than a printed one. Of course, the habit of taking no written history is to be condemned and regretted.

The history form used in the Gynecology Clinic of the Medical College of Virginia Out-Patient Department is filled in with no omissions except in unusual cases. It will be noted that the form has an upper and a lower part. In the upper part the form is filled in briefly, using one or two words or figures, or a check if the condition is normal, or a zero if absent, or a cross if abnormal. If abnormal, a more detailed description is made in the lower part of the form which has been left blank for this purpose. Also in the lower part of the form is put pertinent information for which there is no space in the upper part. It is well to remember that the patient may not know the meaning of technical terms. Simpler language should be used in addressing the patient.

II. *Remarks Concerning the Examination.*

With obvious exceptions the general examination of a patient should include a gynecological examination. Likewise, the gynecological patient should have a general physical examination as well as a local examination. A routine pelvic examination may reveal an unsuspected carcinoma of the cervix. An enlarged thyroid may account for menstrual disturbances.

The gynecological examination should follow a routine form. The examination should begin with an inspection of the vulva, after having put the patient in the lithotomy position and the bladder having been emptied. Then the urethral meatus should be inspected and the urethra and its associated Skene's ducts should be palpated, if possible, and stripped to express any pus or mucus present. Smears of such discharge should be taken. The presence of redness, swelling, undue tenderness, induration or pus suggest acute or residual infection. In some instances urethral carcinoma, polypi, caruncles, or suburethral cysts are demonstrable. Instruments such as urethroscopes and skenoscopes may be of considerable value in unusual cases. An attempt should be made to palpate the Bartholin's glands, located symmetrically on each side of the vestibule. If indurated or enlarged they are palpable and diseased. The opening of the ducts, especially if inflamed, may be seen in the vestibule just external to the hymenal ring. Pus exuding from these should be smeared and examined microscopically. It is probable that infection of Skene's ducts and of Bartholin's glands are often not gonorrheal in origin, but they are commonly so. The introitus should be inspected for size and condition.

It is essential that the digital examination be done gently and as painlessly as possible. In bimanual examination which hand is used in the vagina and which on the abdomen is a matter of individual preference and is in most instances unimportant. The vaginal hand should be gloved for the protection of the patient, the physician, and the next patient. The glove, of course, should be sterilized after each case. The index and middle fingers should be well lubricated with a greaseless substance and inserted with pressure posteriorly upon the perineum to avoid contact with the more sensitive anterior structures. At the same time it is well to separate the labia with the other hand. Pressure is then exerted downward and outwardly to gauge the strength and size of the perineum. The patient is made to bear down while the labia are separated to determine if there is abnormal bulging of the posterior and anterior walls of the vagina. She is then made to contract the levator ani muscles to determine their condition. The size, shape, consistency, position and direction of the cervix should be noted, and also the size, shape, position, consistency and mobility of the uterine body. The lateral aspects of the pelvis should next be palpated for masses, induration and tenderness. In cases of relaxation it is often well to examine the patient standing erect, or else some cases of cystocele and prolapse will be missed. Rectovaginal examination is very useful. It is especially valua-

ble in cases that will admit only one finger into the vagina, and in cases of diseased processes in the pouch of Douglas and in the rectovaginal septum.

In cases in which the rectum and sigmoid colon are distended with feces it is often desirable to re-examine the patient after an enema.

The most commonly used specula are of the bivalve variety. It is well to have these in three sizes to meet the need of varying sizes of the vagina and introitus. This speculum should be well lubricated when used, inserted obliquely and pressed posteriorly rather than anteriorly, then turned on reaching the vault of the vagina, and the blades separated. Special specula for long narrow or constricted vaginas are essential in some cases. Speculum examination of the virgin or of those patients with contracted vaginas can sometimes be done with an urethroscope.

The matter of illumination is very important. The use of a floor lamp often does not meet the need. A head lamp may be better, and better still is a light that fits directly onto the speculum. Introduction of the colposcope by Hinselmann should improve the diagnosis of cervical lesions by inspection. The magnification used is approximately ten times. The use of this instrument may increase the early diagnosis of carcinoma and of precancerous lesions.

Smears from the cervical canal and urethra should be taken on all cases having or complaining of an abnormal discharge. Often they should be of both the dry and wet variety. The former to be stained for bacteria, and the latter examined for yeasts and trichomonads. The material for the wet smears can be taken with a wire loop, a pipette, or even a cotton swab. It should be mixed with a drop of normal saline on a glass slide and, of course, examined at once under the microscope. The dry smear material is taken with a swab and transferred to the slide with a rolling motion rather than rubbed on. The smears are then stained and examined. The Gram method of staining is most valuable.

The gynecology clinic's Physical Examination form appears on the back of the History Sheet. Its format is similar to that of the History form and so is the manner of its use. All items are answered except in unusual cases.

III. *Forms Used:*

MEDICAL COLLEGE OF VIRGINIA

GYNECOLOGIC OUT-PATIENT DEPARTMENT

HISTORY SHEET *Date*_____

*Clinic Doctor*_____

Use one word where appropriate. v=normal x=abnormal, see below

NAME: AGE RACE: MARITAL STATUS:

ADDRESS: OCCUPATION:

CHIEF COMPLAINT: Duration:

OPERATIVE HISTORY: (character, date, hospital, doctor)

MENSTRUAL HISTORY: Menarche: Menopause: Frequency: Duration:

Amount: Character: Date last: Date before last:

Change in rhythm: Amenorrhea: Intermenstrual Bleeding

Dysmenorrhea: Pro Con Post

Leucorrhea: Amount: Color: Odor: Itching:

OBSTETRICAL HISTORY: No. pregnancies: Date of last:

No. and character miscarriages: No. living children:

Character labors: Character puerperia:

Coitus: Date of last: Frequency: Libido: Dyspareunia:

Contraceptives:

URINARY: Dysuria: Frequency: Urgency: Nocturia: Hematuria: Incontinence

NERVOUS: GASTROENTERIC: CARDIORESPIRATORY:

Below give pertinent additional history, elaborating abnormalities noted above.

MEDICAL COLLEGE OF VIRGINIA
GYNECOLOGIC OUT-PATIENT DEPARTMENT
PHYSICAL EXAMINATION SHEET *Date*_____

NAME: AGE:

v=normal x=-abnormal o=not present Blank=not examined

Abdomen:					
Vulva:	Perineum:	Bartholin's Glands:		Urethra:	Skene's Ducts:
Introitus		Vaginal mucosa:		Rectocele:	Cystocele:
Discharge:					
Cervix:	Size:	Shape:	Consistency:	Position:	Direction:
	Appearance:				
Body:	Size:	Shape:	Position:	Consistency:	Mobility:
Fornices:		Masses:	Induration:	Tenderness:	
Rectal:					

Below give elaboration of abnormalities noted above, further examination, if done.

TENTATIVE DIAGNOSIS:

OBSERVATIONS IN THE MANAGEMENT OF TWO HUNDRED AND THIRTY FOREIGN BODIES IN THE AIR AND FOOD PASSAGES*

ELBYRNE G. GILL, M.D.,
and
JAMES H. GRESSETTE, M.D.,
Roanoke, Virginia.

In 1936 we presented to this Society our observations in the management of one hundred and sixty-four foreign bodies in the air and food passages. Today we are reporting two hundred and thirty cases with the progress which has been obtained. Bronchoscopy is a recognized specialty by the profession and is no longer looked upon as a spectacular procedure. Despite the general knowledge of bronchoscopy and its usefulness as a diagnostic and therapeutic procedure, the medical literature has reports of many instances of failure to make use of this important procedure in obscure chest conditions.

In this report, we wish to present the following information:

(1) The signs and symptoms of foreign bodies in the respiratory tract.

(2) The signs and symptoms of foreign bodies in the esophagus.

(3) The location of foreign bodies in the respiratory tract and esophagus.

(4) The causes of death in this series.

(5) The number of tracheotomies.

(6) Methods of prevention.

(7) Our methods of preparation of the patients for bronchoscopy.

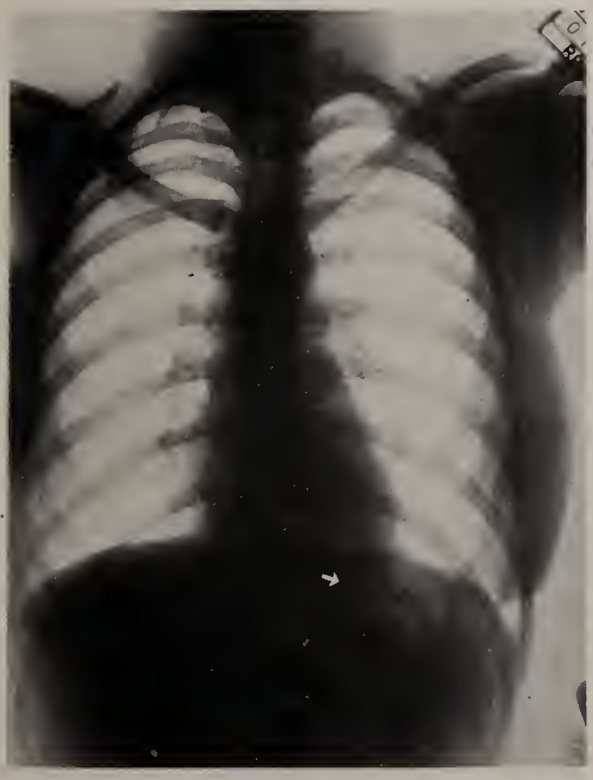
Where there is a definite history of choking while eating followed by severe coughing, the possibility of a foreign body in the air passages must be con-

Patient H. R. Age—9 months. Safety pin in esophagus. Duration—12 hours. Removed esophagoscopally.

*Read at the annual meeting of the Medical Society of Virginia at Virginia Beach, October 6-8, 1941.

Patient P. H. Age—18 months. Before bronchoscopy. Whole grain of corn in right main bronchus. Typical obstructive emphysema.

After bronchoscopy. Whole grain of corn in right main bronchus. Typical obstructive emphysema.



Patient I. S. Age—17 years. Straight pin in lower stem bronchus. Duration—two years. Symptoms—persistent cough. Illustrates importance of x-ray studies in all cases of unexplained cough.

sidered whether there was cyanosis or not. The signs vary with the kind and type of foreign body: if it was a small and light object, if soon after the accident you may hear a rattling or thumbling sound over the trachea, or if there is obstruction to the bronchus, air is at first trapped in the distal portion so as to give obstructive emphysema signs, greater transparency on the affected side, the heart dislocated to the unaffected side, and the diaphragm depressed and flattened on the affected side. This may go on to complete obstruction of the airway in the bronchus; then the air distal to the obstruction is absorbed, and we have atelectasis with its signs, especially the displacement of the heart to the affected side. The trachea is usually pulled to the affected side. The course by which atelectasis is produced may be quicker if there is complete obstruction at first to the bronchus.

Foreign bodies in the food passages may give a history of choking or gagging usually followed by dysphagia. The pain is usually consistently at one point and is increased on swallowing. Frequently there is regurgitation of food, or there may be obstruction to the esophagus which gives a spilling over of secretions and fluids into the larynx and trachea to give respiratory symptoms, or the foreign

Patient J. B. Age—8 years. Can opener in esophagus. Removed esophagoscopally.

body may be in the esophagus and press on the trachea to give symptoms referable to the respiratory tract.

Patient 15 years old. Metal banjo screw in left inferior bronchus. Duration three years. Symptoms—persistent cough. Screw removed bronchoscopically.

The following analyses are self explanatory.

FIRST ANALYSIS OF 230 CASES:

Foreign Body in Hypopharynx	14
Foreign Body in Cricopharyngeal	39
Foreign Body in Larynx	14
Foreign Body in Trachea	6
Foreign Body in Right Bronchus	41
Foreign Body in Left Bronchus	21
Foreign Body in Esophagus	74
Foreign Body in Stomach	16
Foreign Body in Large Intestine	2
Foreign Body in Small Intestine	3
Total	230

SECOND ANALYSIS OF 230 CASES:

Deaths due to:

Acute pneumonitis following removal of foreign body	2
Lung infection	2
Perforation of bronchus	1
Total	5

THIRD ANALYSIS OF 230 CASES:

Tracheotomies necessary

Dyspnea prior to bronchoscopy	10
Dyspnea following bronchoscopy	5
For removal of foreign body	2
For aspirating pus in lung abscess	1
Total	18

FOURTH ANALYSIS OF 230 CASES:

Multiple foreign bodies	3
More than one attempt to remove foreign body	7
Failure to remove	6
Number expelled by cough	4
Number passed into stomach and recovered	21
Total	41

Youngest patient	1 month
Oldest patient	76 yrs.
Duration of foreign body	½ hr. to 7 yrs.

FIFTH ANALYSIS OF 230 CASES:

Number of open safety pins, point up in esophagus	12
Number of open safety pins, point up in trachea	2
Number of open safety pins, point up in larynx	2
Portions of safety pins in bronchus	1
Closed safety pins	2
Total	19

Number passed by bowel	7
Number removed endoscopically	12
Number coughed by larynx	1
Total	20

SIXTH ANALYSIS OF 230 CASES:

Mineral Kingdom:

Clip binder (Chicago screw post)	1
Button	1
Metal portion of lipstick	1
Suitcase rivet	2
Metal screw from banjo	2
Shoe horn	1
Safety pins	21
Straight pins	9
Small bolts	1
Metal top from horn	1
Piece of wood	1
Piece of lead	1
Coins	2
Coin (dime)	1
Coin (French penny)	1
Coin (penny)	7
Coin (quarter)	3
Coin (nickel)	9
Small nail	2
Small tin ring	1
Tobacco top	1
Brassiere hook	1
Dental plates	3
Mattress tacks	2
Shipping tacks	1
Carpet tacks	2
Nails	2
Portion of lamp chimney	1
Piece of wire screen	1
Portion of safety pin	1
Glass beads	3
Jack rocks	2
Copper rivets	1
Pipe stem	1
Piece of wire	1
Overall buttons	2
Small rock	1
Tin whistle	1
Thumb tack	1
Slot machine check	1
Metallic tacks	2
Metallic washer	1
Can opener key	1
Needle	1
Tin disc size of .25	1
Total	103

Animal Kingdom:

Squirrel bone	1
Vertebra of squirrel	2
Fish bones	11
Chicken bones	24
Bolus of meat	18
Bolus of food	1
Turkey bone	1
Beef bone	2
Bolus of chicken meat	2
Chicken gizzard	1
Partridge bone	1
Fibrinoids cast	1
Total	65

Vegetable Kingdom:

Nut shell	5
Peanuts	17
Peanut fragment	1
Piece of apple	1
Piece of wheat bread	1
Whole grain of corn	7
Cackle burr	1
Pinto bean	1
Piece of cocoanut	1
Splinter of wood	1
Portion of corn cob	1
Coffee grains	2
Husk of peanut	1
Beans	2
Watermelon seeds	2
Chestnut	1
Piece of grass seed	1
Apple stem	1
Piece of walnut	3
Piece of walnut hull	2
Peach seed	1
Prune seed	1
Portion of grain of corn	1
Grain of corn	1
Weed	1
Piece of cinnamon bark	1
Cedar twig	1
Piece of grass with barbs	1
Husk of grain of corn	1
Piece of carrot raw	1
Total	62

Tracheotomies frequently have to be done following bronchoscopies, especially on patients under two years of age. The frequency can be decreased if great care is taken in selecting the size of the bronchoscope, using the smallest possible. Do not prolong the operation. The operator must be gentle. He must have teamwork to do his best for the patient.

ANESTHESIA

We have abandoned the idea that anesthesia, local or general, is unnecessary in children. Our policy is to give some form of anesthetic in every case that is not dyspneic. We obtain muscular relaxation either by use of morphine with atropine or sodium amytal per rectum, supplemented with ether if necessary, being mindful never *completely to abolish the cough reflex.* We feel confident better work and less traumatism will occur under muscular relaxation which is impossible without some degree of anes-

thesia. We have never had a patient to develop pneumonia following bronchoscopy under ether anesthesia, nor have we had a patient develop pneumonia following a tracheotomy.

MORTALITY

Four deaths in this series of two hundred and thirty patients gives a mortality rate of 1.7 per cent. This compares favorably with the results in the larger bronchoscopic clinics. We attribute our low mortality rate to careful preoperative and postoperative treatment combined with the strict observance of bronchoscopic technique. Most of the foreign bodies in the respiratory tract occur in very small children who are ill nourished, ill clad, and ill housed. Often times blood transfusions are given before and after bronchoscopy. Careful medical attention to these children cannot possibly be too strongly emphasized.

CONCLUSIONS

The greater percentage of foreign bodies of the food and air passages occur in children under the age of five. Foreign bodies occur more frequently in the food passage with the mineral kingdom leading the list and with coins predominating. The peanut is our most frequent intruder of the air passage. We notice that the duration of the object's stay is much less now than it was during the first part of this series. This is due to the greater alertness and ability of doctors to investigate their patients' complaints. Our procedure for the best results is: a careful history, physical examination, x-ray, an early endoscopic examination and removal, if possible, of the offending foreign body. This requires teamwork for it is no individual doctor's problem.

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DISCUSSION

DR. V. W. ARCHER, University: I am certain that Dr. Gill had in mind but did not have time to talk about the most important single part of the x-ray examination, which is fluoroscopy. Only in this manner can one detect the motions of the diaphragm. If there is a foreign body in even one of the minor divisions of the bronchial tract, you will see a definite lag in the diaphragm on that side. For this examination you screen the fluoroscopic shutter down so as to get the two diaphragms parallel. Make the patient cry, or, if old enough, breathe deeply. Watch the diaphragms move. If there is an obstructive emphysema, you will see an immobility of the diaphragm on that side. The other diaphragm will move fairly normally. Note the position of the heart. Instead of the heart rotating on its axis as it ordinarily does, you will see it pushed over towards the good side. Now, the opposite is true in atelectasis. You will see an immobility of the diaphragm on the affected side, but the heart is displaced over in that direction. These cases are easy. The hard ones are the ones where there is partial obstruction of the bronchus. In these cases there will be no fixation of the diaphragm; the diaphragm will move, but on the affected side you will see a definite lag of the diaphragm. One diaphragm will go down normally, then the other will follow it rather slowly.

Therefore, if you are going to call it an x-ray examination, you must include fluoroscopy, because films alone are worthless in this type of case. It is by fluoroscopic examination of the movement of the diaphragm alone that one may detect partially obstructing foreign bodies.

Department of Bronchoscopy,
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DISEASES OF THE LIVER
CLINICAL FEATURES; LIVER FUNCTION TESTS; AND TREATMENT*

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Despite the great achievements of modern medicine, diseases of the liver even now may be quite difficult to diagnose with certainty and often impossible to treat with any degree of satisfaction. Any hope for a better understanding of the diseases of that organ must lie in a more intelligent comprehension of their physiology and a more accurate correlation of the pathologic disturbances underlying those diseases with the clinical features presented by them.

In the past few years considerable light has been thrown upon this subject as a result of the large amount of research that has been carried on in that connection. In particular, this work includes the

*Read before the Rowan County Medical Society, Salisbury, N. C., May 8, 1941.

investigation of the plasma proteins, their formation, storage and utilization; the studies dealing with the effect of starvation, plasma phoresis, and the various diets on the composition of the liver structure; and the discovery of vitamin K and the source of prothrombin. One should mention also the recognition of the production of hypoproteinemia by liver disease and the appreciation of the full significance of a lowered plasma protein as regards the production and outcome of many important medical and surgical disorders. Among the numerous other contributions are the introduction and perfection of more satisfactory liver function tests which enable us to understand better the physiologic capacity of that organ *in vivo*.

It is upon the basis of the conclusions which may be drawn from the investigative work done on the subject that the presentation of this paper is considered justified.

Such a discussion of this group of diseases may be appropriately conducted under the following three headings:

1. The clinical features of the more frequently encountered types of liver diseases.
2. The common laboratory aids useful in the diagnosis of the disorders affecting the liver.
3. Some suggestions regarding the treatment of certain diseases of the liver.

Clinical Features

The majority of diseases which involve the liver produce either (1) an interference with the excretion of bile with the development of jaundice, or (2) a disturbance of the vascular supply with the production of ascites. Before the disorder has progressed to the point where jaundice or ascites has developed, there is very frequently found an enlargement of the liver and/or of the spleen.

Inasmuch as it is frequently the first sign of the disease, one may properly begin by considering the enlargement of the liver. This increase in the size of the organ may be characterized either by a smooth even surface or by a rough irregular palpable exterior. The causes of hepatomegaly are several. The most frequent cause, by far, for the enlargement of this organ is vascular engorgement resulting from cardiac decompensation. This type of hepatomegaly, however, is not *per se* a disease of the liver and consequently deserves no further consideration in this type of discussion.

When the organ is enlarged and presents a smooth surface, the condition results usually from an infiltration of the organ by (1) fat, (2) amyloid, or (3) pigmentary deposits which occur in connection with hemachromatosis.

A great majority of the fatty livers are found in people who have been heavy users of alcohol, and really represent the early stage of the alcoholic type of cirrhosis. Occasionally, however, one finds a rather large smooth liver in a person without a history of alcoholic consumption. Some of these livers, after a variable period of time, develop into a true pigment cirrhosis, the fatty infiltration merely being a forerunner of the actual fundamental disorder. In other instances inadequate or improper diet with pronounced vitamin deficiency accounts for the fatty type of hepatomegaly.

Amyloid disease is much less frequently encountered now than it was just a few years ago. The cause for the decrease in the frequency of its occurrence today is the fact that we less often see the protracted cases of tuberculosis and chronic sepsis which are the diseases in which the amyloid conditions are commonly found.

Irregular or nodular hepatomegaly is also found in a variety of different disorders. The most common cause of such enlargement of the liver is cancer. The original site of the growth is usually in the gastro-intestinal tract, the involvement of the liver resulting from secondary invasion of that organ by metastasis from the primary lesion. The enlargement in such cases occurs comparatively rapidly—over a period of a few weeks. The neoplasm frequently grows into the veins of the organ, ruptures into the blood stream, and spreads rapidly by the hematogenous route to many parts of the liver. The concomitant pressure on the veins produces a congestion which adds to the rapid enlargement of the organ.

Primary malignancy of the liver does occur, but it is a rather rare form of neoplasm.

The next most frequent cause for nodular or irregular enlargement of the liver is syphilis. Occasionally a considerable degree of luetic involvement of the liver exists for a long time without giving rise to any signs or symptoms of liver disease. The usual lesions found in syphilitic involvement of the liver consist of multiple gummata scattered through both lobes. At first the organ is enlarged and presents an irregular palpable surface. As the process continues the liver contracts and steadily diminishes

in size until it is a very small, quite irregular mass, consisting almost entirely of accumulations of fibrous tissue with very little of the liver structure intact. The organ at the final stage is spoken of as the hepar lobatum; associated with the latter condition, there is jaundice, ascites, and all the indications of hepatic insufficiency.

Liver abscesses are another cause of the irregular or nodular form of hepatomegaly. The type of liver abscess which is most frequently encountered is that associated with amoebic infections. While this type of lesion is usually considered as being a single abscess, much more often these abscesses are really multiple. This type of hepatic abscess is in most instances a medical problem and should be treated as such. Experience has proven that it is only seldom necessary to evacuate them, as in the vast majority of cases they melt away under the administration of emetine hydrochloride. When any surgical procedure is indicated, aspiration is the method which should be employed.

Pyelophlebitic or septic abscesses occur as a complication of septic processes existing elsewhere in the body. There is associated with the gradual enlargement of the liver: high irregular fever, chills, sweats and jaundice. The abscesses in this condition are also multiple and, of course, contain purulent material. The condition is due to an infection caused by either staphylococci, streptococci, or some other pus-producing organism and is frequently benefited by the sulfonamid drugs.

Hydatid cysts are seen much less frequently in this country than any of the conditions previously named. It practically never occurs in a native born American, but is usually found in Syrians, Greeks, or Australians. The disease is contracted from sheep-dogs. The treatment of this condition is, of course, surgical. The important thing to remember in this connection is that before the cyst is aspirated, it should be injected with a 10 per cent solution of formaldehyde. After a fifteen minute period of waiting, the cysts may then be aspirated without so much danger of spreading the disease to uninvolved tissue.

As regards the enlargement of the spleen, it may be said that when splenomegaly is found one should think of liver disease and examine carefully for an enlargement of that organ. However, the spleen may be enlarged for as long as ten to fifteen years before the symptoms suggesting the presence of the associated liver disorder manifest themselves.

When one is thinking of or suspecting the presence of liver disease, it is a wise policy, when possible, to have the lower end of the oesophagus examined for the presence of varices in that region.

Ascites

In order to understand and appreciate the mechanism through which the development of ascites occurs, one must take into consideration certain phases of the physiology of the liver.

The fact is that the liver is the chief manufactory of the plasma proteins of the body. In that organ at least a large part of the fibrinogen, a considerable quantity, if not all, of the serum albumin, and the greater part of the serum globulin are produced. In diseases of the liver the production of the plasma protein is interfered with and, in the course of time, hypoproteinemia will develop. With the occurrence of hypoproteinemia the normal fluid balance of the body must be disturbed. As the disease of the liver progresses and the fibrotic changes occur, the factors responsible for the development of portal obstruction are obtained. One may easily see that with the increased vascular pressure in the liver, on the one hand, and a lowered plasma protein in the vessels, on the other, the filtration of large quantities of fluid into the peritoneal cavity is an inevitable consequence. Thus ascites is produced.

Jaundice

Under normal circumstances the life of the red blood cell in the body is approximately thirty days. There is, of course, the constant production of erythrocytes to replace those that have existed their expected time and are undergoing disintegration. This breaking down of the red cells occurs in the reticulo-endothelial tissues, especially the spleen. In these same tissues the hemoglobin, which is liberated is split into globulin and hematin. The hematin is further divided into the iron-containing element, hemosiderin, which is conserved by the body for the manufacture of fresh hemoglobin, and the pigment substance bilirubin. The bilirubin which is thus turned loose in the blood stream is normally removed from the circulating blood by the liver cells, being excreted in the bile and conveyed into the intestinal canal by way of the bile passages and common duct. Here some of the bilirubin is converted into urobilinogen. This latter substance is in part absorbed from the intestinal tract and is conveyed

by way of the blood stream to the kidneys where some of it is eliminated in the urine. The uneliminated portion is taken up by the liver and is re-excreted in the bile, the process continuing as an uninterrupted cycle. Any part of the bilirubin not converted into urobilinogen undergoes hydrolysis and is changed first into stercobilinogen and then into stercobilin. This latter substance is eliminated in the stools and gives rise to most of the color possessed by the movements. The above described cycle of events is continuous and effective, unless some pathological process interrupts it at some point in its progress.

The amount of bilirubin normally existing in the blood is 2/10 to 6/10 mgm. per cent. An appreciable increase in the amount of bilirubin in the circulating blood gives rise to jaundice irrespective of the cause of its accumulation.

The production of jaundice is accomplished by any one or a combination of the three following conditions:

(1) Conditions causing an excessive degree of hemolysis of the red blood cells (hemolytic).
(2) A widespread damage to or destruction of the liver tissue (parenchymatous).
(3) Obstruction to the bile ducts (obstructive).

While these three types of jaundice may be described separately and distinctly, in reality they are more frequently seen in combination. For example, any toxic condition which brings about such a marked degree of hemolysis as to produce jaundice very frequently causes some degree of hepatitis with the failure of the liver cells to eliminate the bilirubin as they should. On the other hand, any obstructive process involving the bile ducts over more than a very short time is likely to produce by back pressure a degenerative change in the liver cells with the same result as indicated above.

These facts add to the confusion of the picture and make more complicated and perplexing the interpretation of the laboratory data as well as the clinical picture presenting.

Liver Function Tests

The purposes of the various tests used in studying liver disease are: first, to determine the depth of, and the variations in, the degree of jaundice as well as its type or cause; second, to ascertain the functional capacity of the liver in performing certain of its physiological functions; and, third, to establish the extent of the damage to, and the degree of inflammation involving, the liver cells. Upon the basis of the results of these tests certain helpful, but not very conclusive, opinions regarding the prognosis in the given case may be obtained.

Liver Function Tests Relating to Jaundice

The tests relating to jaundice involve an examination of the blood, stool, and urine. The substance to be tested for or quantitatively determined in the blood is bilirubin, while in the stool and urine both bilirubin and urobilinogen may be identified and quantitatively estimated. Of the tests applying to the blood, there are two principal ones.

The first test to be considered is the *icteric index*. This test consists of a comparison of the blood serum of the patient with a color standard solution. Two to eight units is considered the normal, while eight to fifteen units reveals latent jaundice, and fifteen units or more indicate definite clinical jaundice. This is a very satisfactory and reliable test. It may not be relied upon, however, in the presence of an existing carrotinemia.

By means of the Van den Bergh test one may determine either qualitatively or quantitatively the presence of bilirubin in the blood. There are two main types of reaction: the direct and the indirect. The direct reaction (qualitative test) may manifest itself in any one of three forms: (1) the immediate, (2) the delayed, or (3) the biphasic type of response. The quantitative test is the same as the indirect Van den Bergh. It gives exactly the number of mgm. per cent of bilirubin in the blood. Two-tenths to six-tenths mgm. per cent is considered the normal range.

Type of Jaundice	Van den Bergh Reaction
Hemolytic	Indirect
Parenchymatous	Direct (delayed or biphasic)
Obstructive	Direct (Prompt)

There is no test for urobilinogen in the blood.

As a means of determining the presence of the bile elements in the stool, the color of the feces is a very satisfactory procedure. It is possible to determine quantitatively the amount of bile elements present in the stool. The Watson test will give the amount of urobilinogen present in the twenty-four hour elimination. The Speckman procedure consists of the determination of the amount of the urobilinogen in 5 gm. of the feces, from which figure the

Van den Bergh			
Direct			Indirect
Immediate	Delayed	Biphasic	
1. Normal bile	1. Serum of parenchymatous jaundice	1. Serum of parenchymatous jaundice	1. Normal serum
2. Serum of obstructive jaundice			2. Serum of hemolytic jaundice
			3. All sera giving direct reaction

quantity contained in 100 gm. of the stool can be determined. The normal is considered 100 to 250 mgm. per 100 gm. of feces. These tests are quite complicated and technical and are therefore of very little practical importance.

As regards the urine, the presence of bilirubin can be detected quite satisfactorily by the Foam test. The spot test may be employed, but it adds very little information.

There are several satisfactory tests for the presence of urobilinogen in the urine, but the one suggested is the Watson test. This is comparable to the test of the same name used to determine the quantity of urobilinogen in the stool. The amount excreted in twenty-four hours in the normal person is between ½ and 2 mgm. This test also is too technical to be of any significant value in general practice.

The outline above illustrates roughly the quantity of bilirubin and urobilinogen in the blood, urine and stool in the several types of jaundice as compared to the amount found under normal circumstances.

To be of any value, all tests relating to jaundice must be done serially, inasmuch as their significance lies very largely in the trend of the curve from time to time and not the reading at any particular examination. It is advisable to repeat the tests every second day, so that any variation in the degree of jaundice may be ascertained. For example, an obstructing common duct stone as a rule shifts from time to time, allowing the discharge of bile and changes in the amount of retained bile pigment. In carcinomatous obstruction of the biliary passages the persistence of the jaundice is steady or progressive and no appreciable decrease in the icteric index or the quantitative Van den Bergh occurs at any time.

Secretory Function Tests

The test to be considered in this group is the Bromsulfalein Test. By this procedure, one determines the rate of elimination of the dye which, under normal circumstances, is removed from the blood by the liver very rapidly and effectively. Apparently the reticulo-endothelial system plays a very important but unexplained part in the elimination of this dye from the blood stream. The technique of the test consists of giving the patient intravenously 2 mgm. of the bromsulfalein per kilo of body weight and collecting specimens of blood at the end of five minutes and a half hour following the injection of the dye. In the presence of a normal liver, the first specimen shows that 95 per cent or more of the dye has been eliminated, while the second reveals that its complete removal has been accomplished.

This test should not be used in the presence of jaundice, because it can not be satisfactorily interpreted under that condition.

Type		Bilirubin	Urobilinogen
Hemolytic Jaundice	Blood	two plus	no test
	Urine	none	two plus
	Feces	one plus	two plus
Obstructive Jaundice Complete	Blood	two plus	no test
	Urine	two plus	none
	Feces	none	none
Obstructive Jaundice Incomplete	Blood	one plus	no test
	Urine	one plus	none to one plus
	Feces	none to one plus	none to one plus
Parenchymatous Jaundice	Blood	two plus	no test
	Urine	two plus	two plus to none
	Feces	one plus	one plus to none

This is a very helpful test in the diagnosis of cirrhosis of the liver; is a comparatively simple one to perform; and should be used in cases presenting evidence of liver damage without jaundice.

SUGAR METABOLISM TESTS

1. Glucose.
2. Levulose.
3. Galactose.

The galactose test is the only one of the three which is worth very much. It consists of giving by mouth 40 grams of galactose diluted in 300 cc. of water. Collect the urine at hour intervals for five hours. Remove the dextrose by fermentation and then determine the quantity of galactose excreted. The normal liver will allow the excretion of less than three grams of galactose in five hours. In conditions in which the liver is damaged the amount of sugar excreted will be greater. The difficult thing in the evaluation of the test is the fact that the rate of absorption of galactose varies much in normal individuals, so that the results may be confusing. Theoretically, at least, it is a good test and should be employed. An intravenous modification may make it more popular in that the absorption error can thereby be eliminated.

FAT METABOLISM TESTS

1. Total cholesterol—150 to 220 mgm.
   a. Free fraction—34 per cent.
   b. Ester fraction—66 per cent.
2. Phospholipids.
3. Total lipids.

In obstructive jaundice the total cholesterol is increased; the partition, however, is normal.

In the parenchymatous jaundice, the total cholesterol is normal. The partition in this condition is reversed, so that the esters constitute 34 per cent and the free fraction 66 per cent.

PROTEIN METABOLISM TESTS

These tests consist of the following:

1. Total serum protein: the normal value 6 to 8 gms. per cent.
2. The albumin-globulin ratio; the normal A/G = 2.5 to 1.
3. Takata Ara. This is not important except in advanced cirrhosis.
4. Cephalin—Cholesterol.
5. Colloidal gold.

NON-CLASSIFIED

1. Phosphatase.
2. Prothrombin time.

The first of the protein metabolism tests, of course, takes into consideration the fact that the greater part or all of the plasma protein is manufactured in the liver and a very large part of it is stored in the hepatic cells. Any pronounced inflammatory or destructive lesion involving the parenchyma of the liver would, therefore, most probably result in the failure of the organ to manufacture and store the plasma protein. Under such circumstances the plasma protein in the circulating blood will fall below its normal value of 6 to 8 gms. per cent, despite an adequate protein intake.

The second of these tests is based upon the fact that the normal albumin-globulin ratio of 2.5 to 1 is frequently reversed in those conditions in which the destruction of liver cells occurs or the function of these cells is considerably disordered.

The Takata Ara test is of no great importance. It was introduced with the idea that it would be very specific in differentiating the types of liver disease. It is not a specific test, as experience has proved, but it is one which can be relied upon to determine serious damage to the liver cells.

The cephalin flocculation test may be described in brief as consisting of adding an emulsion of cephalin and cholesterol to diluted serum and noting the degree of flocculation and precipitation after twenty-four and forty-eight hours.

The conclusions of Hanger and Patek are:

"1. The ultimate prognosis in patients with Laennec's cirrhosis showing persistently strong reactions is not favorable irrespective of apparent clinical improvement.

"2. Progressive decrease in the intensity of the cephalin flocculation reaction often accompanies clinical improvement and a return of blood proteins to normal. Relapses in this group are relatively uncommon.

"3. A negative reaction does not exclude the diagnosis of cirrhosis. However, patients with persistently negative tests tend to have a relatively favorable course.

"4. The intensity of the flocculation test does not parallel the presence or absence of ascites in cases of cirrhosis of the liver. However, no cases of alcoholic cirrhosis with jaundice have been encountered giving a negative reaction."

The prothrombin time is made use of as a test for liver function in that prothrombin is a product of the liver cells. In conditions in which there is much damage to the liver cells the production of prothrombin will be impeded and the prothrombin time of the blood increased. If the prothrombin time is unduly prolonged in the presence of jaundice the following test may be employed: a precursor of prothrombin is administered to the patient parenterally, following which the test is repeated. Should the prothrombin time still be prolonged, damage to the liver cells may be assumed.

TREATMENT OF LIVER DISEASE

The important single thing in regard to the medical treatment of liver disease is the consideration of the protein stores in the liver cells. For a long time it was thought that the carbohydrates were the important feature and that to push the carbohydrate intake was the most important curative and protective factor. Experience has proven that the carbohydrate is secondary and that the protein reserve in the liver cells is the primary consideration in the therapy of the diseases under discussion. It has been proved by Whipple and others that the livers of animals fed on a high fat, low carbohydrate and low protein diet rapidly increase in their lipid content. The same thing is true in starvation or when the animal is fed on a carbohydrate diet without protein. Interesting enough, this increase in liver lipid occurs when the animals are fed on a diet lacking in the normal percentage of vitamins. Experiments done on fasting rats show that after twenty-four hours the glycogen store in the liver is reduced as much as 33-1/3 per cent. After a period of forty-eight hours of starvation the glycogen reserve is reduced 50 per cent of the normal. At the same time, it was found that in the first twenty-four hours the lipid content of the liver was increased 100 per cent over the normal quantity.

It has been proven that certain types of diets will result in a high concentration of fat with low glycogen stores in the liver, while other types of diets will produce an increase in lipid with low protein reserves in that organ.

In those conditions in which there is an increased lipid content of the liver, the organ is much more susceptible to disease. Adequate feeding of carbohydrate does very little in the way of protecting the organ under that circumstance. On the other hand, a diet rich in protein or certain amino-acids, notably cystine and merthionine, reduces the lipid content and decreases the susceptibility to disease or intoxication.

From this discourse one can visualize the steps leading to the development of alcoholic cirrhosis and can formulate the appropriate method of treatment for that disease. The large quantities of alcohol, the loss of appetite, the limited food intake, the inadequate vitamin ingestion, all favor the development of the fatty liver, which later undergoes fibrosis producing ascites and other indications of hepatic insufficiency.

The treatment must, therefore, consist of (1) an adequate diet, especially as regards the high protein percentage, a moderate carbohydrate portion and a low fat fraction. Second, vitamins of all kinds must be given in large amounts: both A and D should be given in big doses; vitamin C in quantities up to 400 or 500 mgm. daily; vitamin K *per os* or parenterally, 6 to 8 mgm. daily; and vitamin B-1, 30 to 100 mgm. daily. The other B fractions should also be given in quantities adequate to assure proper metabolism.

The total caloric intake should be 3,500 to 4,000 calories daily. A suitable formula for the diet would be: Carbohydrate 70 per cent; Protein 25 per cent; Fat 5 per cent.

The high protein portion may be made up by the use of casein, cottage cheese, bananas, egg whites, skimmed milk, all of which may be supplemented by the addition of the amino-acids, cystine and merthionine.

If the liver damage is not too great, even if hepatomegaly and ascites are present, marked improvement may occur following this line of treatment.

If the damage to the liver has progressed to the point that there is a marked hypoproteinaemia due to disturbed hepatic function, the outlook is not so good. Under such circumstances, the forced feeding of proteins will accomplish very little, inasmuch as the liver's capacity for manufacturing the plasma protein is much diminished. Even though the tissue proteins may be restored to normal, as would be indicated by the presence of a normal nitrogen balance, no means other than the transfusion of plasma could be expected to elevate the concentration of the plasma protein in the blood.

It is obvious, too, that in the treatment of any other liver disease, in preparation for operation especially on the gastro-intestinal tract, and in the

course of any infectious or toxic process, adequate protein and vitamin intake must be assured in order to prevent a toxic hepatitis or degenerative lesions of the liver.

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PHYSICIAN, PRESCRIBE *

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The title I have been assigned really addresses this paper to our good friends and associates—the physicians—yet it is hoped that it may also serve in some small way to enlighten and inspire the pharmacists. To the latter, one thing must be made clear at the outset: they are not beggars coming for the crumbs from the medical table; they are, or should be, professional people cooperating to the fullest extent with the physician, dentist, and other public health agencies.

The title also bears the partially incorrect implication that the doctor does not prescribe. We realize that nearly 240 million prescriptions are written annually, but should there not be many more replacing the frequent verbal instructions to purchase certain medications? Other than a possible philanthropic desire to improve the economic status of the druggist, are there any reasons the doctor should use those prescription blanks you have placed on his desk? Unquestionably, the answer is "Yes, many reasons." Fantus has said, "The prescription is the keystone to the entire arch of therapeutic endeavor." It is my purpose today to point out the reasons for writing prescriptions and discuss them briefly with you.

First, let us consider concurrently what is probably the greatest advantage a physician has—prestige; and the greatest evil he faces—self-medication. What do these have to do with the question at hand? When a doctor says to a patient, "Go to the drug store and get yourself some XYZ tablets; you'll be all right," he often forfeits his prestige. We are all hypochondriacs at heart, and when we pay a fee for treatment we do not want our ailments to be regarded lightly, no matter how inconsequential he knows them to be. Self-medication goes hand in hand with this, for every druggist knows what happens the next time that patient feels badly. He does not return to the doctor, but buys more of the same remedy and takes it as previously directed. What, then, are the net results? (a) So far as the physician is concerned he has probably sold his prestige for an office fee, and he may also lose prestige with the patient's friends who learn of the case. (b) So far as the customer is concerned, the doctor has encouraged self-medication which may lead to disastrous results at some future time. Every druggist knows many "addicts" who began their constant self-

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treatment in just the way described. (c) What of the pharmacist? He knows he will very often make more money in the long run when a physician starts a patient on the road to self-medication, so his complaint does not have an economic basis. Why, then, does he fuss about this sort of thing? He complains because he wants to exercise his professional skill, because he wants to be a friend of the doctor, because finally he *is* a professional man behind all those rows of merchandise—material he is forced to stock partly because the physician has not always been anxious to cooperate.

Second, a written prescription handed to a patient carries with it a psychological value obtainable in no other way. Why? The patient feels he is receiving the benefits of the physician's specialized training because he has tangible evidence of the same in "that most precious piece of paper" he is given. To him, that may seem to represent a matter of life and death, even though it be only for A.S.A. He feels also that he has received a "tailor made" medicine prepared especially to suit his ills. One way the doctor can test this statement is to ask the druggist what Mrs. Jones thinks about his bills for calls when he merely left advice and "didn't even write a prescription."

Third, a written prescription is often cheaper to the patient than many proprietaries furnishing approximately the same medication. It is not difficult to write a prescription of the same composition as almost any specialty on the market, and the chances are it will save the patient money. For example, a well-known substitute for 1 per cent chrysarobin ointment costs the druggist $1.67 for two ounces, but he can sell the original article to the patient for 75c. Also, a popular isotonic ephedrine proprietary can be duplicated for the patient at one-third less than the commercial article can be sold. The many specialty tonics of the I. Q. & S. type are other examples. It is granted that occasionally, but infrequently, the patient pays more when a prescription is written, though even then some increase is justifiable for reasons of greater safety, cost of container, labeling, etc.

Fourth, there is another very definite safety factor involved in writing prescriptions. Who is to give the final check on the safety of dosage, and how can the physician control the amount purchased without writing a prescription? Recently a doctor, perhaps in haste, wrote for 100 grain and a half digitalis tablets to be taken t.i.d.p.c. et h.s. What might have happened to the cardiac patient who received it had not the druggist noticed that error? A Richmond pharmacist not long ago received a prescription for several capsules of a codeine medication, each containing five grains of the alkaloidal salt. Suppose these had not been prescription items, as often they are not; what would have happened?

Fifth, the patient may err in transmitting the name of the preparation to the druggist. Let the doctor ask any pharmacist how frequently this occurs. Despite a surprising aptitude for recognizing twisted terminology, the druggist might miss his guess and sell the wrong medicine. By way of example, consider the fatalities which have resulted from confusing Laxol and Lysol, or Cascarets and Mercurettes.

Sixth, the warnings and dosages required on labels by the new federal law may make the patient very apprehensive when he sees them. His reaction sometimes is that the doctor may be either careless or ignorant; careless because the label says the medicine is to be used only under the strict supervision of a physician, and ignorant because the stated dose is usually less than he has been told to take. Recently a physician told a lady to get twenty-five Three Bromides tablets and take one every *three* hours during the day. Upon opening the package, she found that the label said, "Direction—*One* dissolved in half a glass of water; repeat in three hours if necessary. Do not take more than two products in twenty-four hours—WARNING—Excessive dosage may in some instances lead to skin rash, mental disturbances, and other serious effects." Consider also what the patient thinks when he is instructed to buy an ounce of a well-known isotonic Ephedrine solution and finds this on the label: "Excessive dosage or prolonged use may cause nervousness or sleeplessness; should not be used where there is high blood pressure, heart disease, diabetes or thyroid disturbances, except as ordered by the physician." That last phrase might have been intended to allay any fears the patient would have on reading the label, but it does not always serve the purpose, as any druggist can testify.

Seventh, it is rather a sad commentary on human nature, but very true, that even the more intelligent patients often "shop for bargains" when given verbal instructions. It is also unfortunately true that there exists a certain class of stores in which substitution

is emphasized. Very often a verbal instruction is not followed because the patient has the misfortune to encounter this type of druggist. We in pharmacy dislike this evil as much as the medical man, but until we find a remedy the only cure is prescription writing, and possibly recommendation of suitable stores to the patient.

Eighth, we may ask the doctors whether they prefer to see a definite quantity of medicine of known composition dispensed with adequate directions for use, or an indefinite quantity with inadequate directions? The procedure of choice is obvious.

Finally, the physician may belong to that small class of medical men who prefer to do their own dispensing. What do they gain, other than a larger investment in office supplies? Perhaps they feel assured of secrecy this way, but do they know how frequently their patients visit the druggist with some of the medicine they have been furnished and plead for more in order to save a fee? This is not ethical, but if the physician insists on taking the pharmacist's business, how many will be so superhuman as to try to cooperate with such medical men? Also, the dispensing doctor has the problem of drug deterioration to consider, with a very definite loss involved in some cases, and perhaps harm to the sick. Of course, the patients cannot know much about this, but it surely does not help a reputation for results. Thus it seems the physician loses in at least two ways by doing his own dispensing; first, due to the large investment and deterioration of stock, and secondly, through the loss on "dead-beat" patients. The confidence and cooperation of the druggist which will still be frequently needed is also lost. One young physician of my acquaintance was rapidly converted from dispensing to practicing when he realized that in one particular case he had collected exactly $8.00 for some twenty office calls during which time he had administered $32.00 worth of a certain preparation. It took a year to get the $8.00. He finally gave the account to a credit agency, and at last reports they had not yet recovered all the balance. Assuming they did collect the total, they would take half, leaving for the physician nothing but ill will and a net loss of more than $12.00 plus his time and trouble. It does not take an accounting expert to show that the doctor rarely, if ever, gains any extra money by doing his own dispensing. Since secrecy is only partially obtained, his efforts are in vain.

Now we cannot claim that all druggists are saints. We realize it may be necessary to recommend certain stores when a prescription is written. This should be perfectly satisfactory to us, provided an effort is made to determine which are the better pharmacies in the community. For the bad ones we must apologize; to the good ones we can point with pride. Bethea has said, *"Prescribing is the final expression of a physician's effort in the treatment of disease.* Without the ability to prescribe intelligently, pathology, diagnosis, therapeutics, and all else in practice is almost useless." The doctor should not fear the druggist's criticisms, but ask him to come to the office, or go around and see him for his help. The pharmacist can aid the physician immensely in selecting the most suitable form for administering a given medicament, and he can help select the best vehicles to carry the medicines so they will be the most palatable to the patient. That "corner scientist" should be the doctor's friend, ready and anxious to serve.

* * *

Now let me be bold enough to say a word or two directly to the pharmacists. My few years in a drug store convinced me that as a group, druggists are the most uncooperative people in the country. When taken to task for this trait, they alibi with mumblings of lack of time, ill treatment by both physicians and other pharmacists, etc., etc., *ad infinitum.*

It is time we got down to a careful searching of our own souls, to separate so far as possible the dross from the pure gold of our profession. Your presence here today is evidence that you have an innate desire to improve yourselves and to improve pharmacy. We have made much progress in recent years, but we still have far to go.

Specifically, let us concentrate on two things:

1. Detail your local physicians regularly, energetically, and above all, intelligently. Show them how you can better serve both them and their patients, and prove to them that you really subscribe to the A. Ph. A. Code of Ethics.
2. Find ways and means of obtaining high grade professional publicity for pharmacy in general, then make your stores look like they deserve it. Regrettable but true it is that many do not have that appearance today. The publicity may be cooperative advertisements stressing the part you play in the Public Health Program, or it

may take the form of talks before various lay and professional groups, even as young as high school pupils.

Emerson once said, "Nothing great was ever achieved without enthusiasm." That very desirable element is abundant here; let us absorb large quantities of it now, then put it to work the year around at home.

FELTY'S SYNDROME.

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In 1924, A. R. Felty reported five cases presenting the unusual syndrome of chronic arthritis in the adult, splenomegaly, and leukopenia.[1] Since then, fourteen similar cases have been described[2] and another is herewith added.

CASE REPORT

A forty-six-year-old white Virginian, formerly a carpenter, came to the medical service in November, 1940, complaining of painful, swollen joints of twelve years' duration.

His life had been spent in the southeastern states. In 1920 he had "influenza and double pneumonia". He denied malaria, typhoid fever, gonorrhea, and syphilis. There was no family history of rheumatism.

Until 1928, he had been in excellent health. Without preceding illness, upper respiratory infecton, or sore throat, he developed sudden severe pain in the muscles of his right upper arm, lasting three days. Two months later, there was very intense pain in the ball of the right foot lasting two weeks. Subsequent attacks ultimately involved every joint but the spine. There were, at first, periods of weeks of complete freedom from pain. Residual stiffness and pain slowly became more diffuse and pronounced following each attack. Joint swelling and pain were sometimes slight, sometimes marked. By 1934, he was no longer able to work because of practically constant disability of hands and feet, but was ambulant with the aid of a crutch. Sinus irrigations, tonsillectomy, extraction of all teeth were without effect. By 1937 he was completely bed-ridden each winter, and his leukocyte count was 2,400. He had an ulcerative stomatitis with scar contractures about the tongue. For fourteen months before admission he was confined to wheelchair and bed, except for infrequent brief intervals when he felt well enough to hobble about his room on crutches. He had lost sixty pounds by 1940, most of it in the two preceding years, and had become very asthenic. Since 1939, weight had been stationary. His appetite always had been excellent.

Physical Examination: Cachectic male, with marked generalized muscular atrophy. Weight, 104 pounds. No pigmentation of the skin. B. P. 100/60.

Nose and throat negative. All teeth absent, tonsils cleanly removed, tongue partially bound down by scar tissue. Sinuses transilluminate well. Lungs clear. Heart not enlarged, sounds distant, no murmurs, rhythm regular. A firm, non-tender spleen extends 12½ cm. below the costal margin in the mammillary line. Liver not felt. One small epitrochlear node on the right, five small nodes in the right axilla, and a few larger inguinal nodes. Prostate small, firm, not tender.

Right shoulder normal, left moderately tender but normal in range of motion. Elbow joints have moderate soft tissue swelling, are painful, tender, with extension limited to one hundred and thirty-five degrees. Slight swelling of the dorsum of the right hand, and wrists quite restricted and painful on motion. Most of the fingers fixed in extension, with a forty-five degree flexion deformity at the metacarpophalangeal joints and moderate ulnar deviation; tender, painful on motion, and moderate fusiform swelling of the third and fourth fingers of both hands. Subluxation of interphalangeal joint of right thumb. Palmar surface of finger tips, thenar and hypothenar eminences are a very bright pink. Knees cannot be extended beyond 150 degrees, are moderately tender, as are also the ankle joints which are slightly swollen, tender, and painful on restricted motion. Small bones of feet and toes are tender and painful, the lower extremities cyanotic and cold.

Laboratory data: Erythrocytes— 4.44 millions. Hemoglobin— 12.7 grams. Leukocytes— 1,700. Stained smear— segmented polymorphonuclears, 52 per cent; unsegmented, 4 per cent; lymphocytes, 38 per cent; monocytes, 6 per cent. Polychromatophilia and moderate anisocytosis. Reticulocytes, 0.2 to 4.2

per cent. Platelets, 96,000 to 113,000. Mean corpuscular volume, 75.4 cu. micra. Color index, .98. Bleeding and clotting times, two minutes.

Kahn and Eagle negative. Agglutination tests for typhoid, paratyphoid, typhus and undulant fevers negative. Gonococcus complement fixation test negative. Culture of prostatic fluid negative. Three blood cultures negative. Culture of an excised epitrochlear node negative. Microscopically, it showed chronic lymphadenitis. Stools negative for amoeba, ova, and parasites.

BLOOD PICTURE DURING COURSE

	Hb.	Rbc	Wbc	Polys	Bands	Lymphs	Monos.	Basos	Eos.
November 4, 1940	12.7	4.44	1700	52	4	38	6		
November 7, 1940			2050	45	8	40		2	1
November 14, 1940		3.90	1800	46	8	38	8		
November 19, 1940			1950	16	10	72	1		1
November 27, 1940			1900	33		65	2		
December 2, 1940	12.3	4.24	1500	19		80	1		
December 9, 1940	13.7	3.97	2500	27	2	66	5		
December 12, 1940	13.2	4.21	3700	34	3	58		2	1
December 18, 1940	13.4	3.87	2000						
December 20, 1940			2400						
January 6, 1941	13.3	4.20	1500	28		68	2		8
January 17, 1941	12.6		4000	67	3	25	2		3
February 17, 1941	13.9	3.98	3250	65		30	3		2
March 11, 1941	13.5	4.32	2050	57		41	2		
April 21, 1941	13.5	4.91	2400	48		46	3		3

Sternal bone marrow biopsy showed a fat to cell ratio of about one to one. However, the cells were much less compact than is usually seen. Erythropoiesis was prominent and active. There was slight hypoplasia of the myelogenic series. Numerous 'blast cell forms were seen, however.

A differential cell count was done on the bone marrow tissue preparation; hemocytoblasts 4; myeloblasts 10; myelocytes 15; band forms 14; mature polymorphonuclears 10; megakaryocytes 2; normoblasts 20; erythroblasts 4; erythrocytes 21.

Red blood corpuscle fragility test normal. Icterus index 5. Serum bilirubin 0.4 mg. per cent. Urine normal, no urobilin. Gastric analysis: no free hydrochloric acid after histamine; total acidity thirteen degrees.

Glucose tolerance test: fasting, 92 mg. per cent; one hour, 140 mg. per cent; two hours, 130 mg. per cent; three hours, 102 mg. per cent; four and one-half hours, 87 mg. per cent.

The bromsulphalein test for liver function was used and showed: after thirty minutes, less than 10 per cent retention; after one hour, less than 10 per cent retention.

Blood urea nitrogen 8.1 mg. per cent; non-protein nitrogen 29.7 mg. per cent; uric acid 0.6 mg. per cent; total plasma proteins 6 per cent; albumin 3.5 per cent; globulin 2.5 per cent; calcium 9.2 mg. per cent; inorganic phosphorus 3.8 mg. per cent; phosphatase 9 mg. per cent (Bodansky units); serum cholesterol 164 mg. per cent.

Blood smears for malarial parasites were negative.

Electrocardiogram: T_1 low, T_2, T_3, T_4 upright. Low voltage.

X-rays: Sinuses: very slight haziness of antra.

Chest: heart and lungs normal.

Joints: joint spaces of elbows considerably decreased, some osteoporosis; considerable osteoporosis, irregularity and roughening of articular surfaces of both radii; some loss of joint space between carpal bones with tendency toward fusion; metacarpal and phalangeal joints show decrease in joint space, roughening, and irregularity of articular surfaces; knee joints show osteoporosis, some loss of joint space and roughening of articular surfaces; ankle joints normal except for rather marked osteoporosis.

Course: Essentially afebrile, except for two brief episodes of mild sinusitis and two periods of moderate diarrhea, stool culture showing B. Morgani.

The patient received a high caloric diet, adequate in vitamins and minerals. In the third week, he was given sulfathiazole for two weeks, with a fairly stable blood level averaging 6 mg. per cent. Coincidentally, he began to feel better, to gain weight, and joint pains lessened.

Casts were intermittently applied to the hands. Attempts at intramuscular liver injections for leukopenia were quickly discontinued because of the patient's strenuous complaints of resultant pain.

At the seventeenth week, 200,000 units of Vitamin D as irradiated ergosterol in neutral oil were given daily, orally. Physio-therapy was begun, in the form of warm baths, massage, and passive motion. At the nineteenth week, Vitamin D was increased to 250,000 units daily. He gained weight and strength quite rapidly during this month.

At the end of five months, he had gained twenty-six pounds. B. P. 114/82. He felt and appeared much better, requiring only occasional codeine and aspirin for moderate joint pains, and was able to manipulate a wheel chair several hours daily. Wrist motion was painless, only moderately limited. Fingers moved almost normally at the metacarpo-phalangeal joints, but several were fixed in hyperextension at proximal and distal interphalangeal joints, sublaxation appearing imminent. Knees and ankles moved normally without pain. Toes were no longer painful on motion although the balls of the feet were somewhat tender. Cyanosis of the legs was much less marked. Sedimentation rate had declined from a diagonal curve of 28 mm. in one hour to a diagonal line of 10 mm.

REVIEW OF LITERATURE

Of the cases reported, nine were males and eleven females. At the onset of arthritic symptoms, the ages of the former varied between thirty-four and sixty-five years; of the latter, between twenty-four and fifty-seven.

Arthritis: When the various case reports were made, arthritis had been present eight months to twenty-four years. In onset and course, its character was indistinguishable from that of an average group afflicted with chronic rheumatoid ("proliferative" or "atrophic") arthritis. There were mild to severe repeated attacks of articular pains lasting days to months, involving one or many joints at a time, sometimes accompanied by signs of acute joint inflammation and short periods of moderate, rarely pronounced fever. Hands, elbows, shoulders, knees, and feet suffered most frequently and severely, but no joint was immune. Intervals between attacks lasted days to months. Usually, pain of slight to moderate intensity finally became almost constant in multiple joints, with acute exacerbations and varying degrees of deformity and limitation of motion. Periarticular tissues, as well as the bony joints, were involved. In some, arthritic symptoms remained quite mild throughout, and there were no joint changes. In two cases, there was complete bony ankylosis within a year: both knees in one, a shoulder and elbow in the other.

Of twelve cases with X-ray descriptions, joint changes did not occur in two whose arthritis had been present three and eight years. In seven cases, with arthritis of eight months' to ten years' duration, there was a slight to moderate degree of infectious arthritis. Of three cases showing considerable narrowing or obliteration of joint spaces, two had mild bony overgrowth of the articular margins of some of the affected joints, the arthritic process having been present one and seven years.

Splenomegaly: There was no correlation between the degree of splenomegaly and the duration or severity of arthritis. One patient with a spleen enlarged to the umbilicus had had arthritic symptoms for eight months. Another, with spleen at the costal margin, had had arthritis for ten years. Still another had splenomegaly for five years before the onset of arthritis.

In three cases, the spleen was palpable; in three, "enlarged"; in eight, two to six centimeters below the costal margin; in five, at the umbilicus; and in one, five centimeters below the umbilicus.

Blood: All but three cases had some degree of hypochromic or normochromic anemia. The erythrocyte count varied between 2.7 and 4.98 millions; average, 3.9 millions. Hemoglobin values ranged from 49 per cent to 85 per cent, average, 66 per cent. The degree of anemia paralleled neither the leukopenia nor the duration and severity of arthritis.

The leukocyte count varied from 640 to 4,200; average, 2,300. The differential cell count was not characteristic. The cellular proportions usually were within normal limits. Occasionally, there was a relative lymphocytosis, and in the presence of severe infections there sometimes was a relative neutrophilia with an increase in unsegmented forms. In most instances, there was an absolute neutropenia, sometimes accompanied by an absolute lymphopenia. Inconstant eosinophilia, up to 13 per cent, occurred in five cases.

In three cases, platelets were moderately decreased. Bleeding and clotting times, where reported, were normal.

Leukopenia and eosinophilia both have been described in chronic polyarthritis. Eaton[3] reported a leukopenia in 22 per cent of two hundred and fifty patients and eosinophilia in 10 per cent.

There were no significant changes in the chemical constituents of the blood.

Other features: Both splenomegaly and hepatomegaly have been described in association with arthritis.[4,5] In nine cases of this collection, the liver was palpably to moderately enlarged, firm, not tender. There was no correlation between the size of the liver and the size of the spleen or the length and severity of the arthritis. Studied in three cases, liver function was normal in two. In the third, function was impaired, but was normal eight months after splenectomy.

In nine cases, there was slight to moderate enlargement of lymph nodes, usually axillary and inguinal, with epitrochlear and cervical nodes less often involved.

Yellowish pigmentation of the skin, mainly of exposed surfaces, was seen in six cases.

During the course of the disease, weight loss varied from six to one hundred pounds; average, forty-four pounds.

A striking complication in four cases was a severe ulcerative stomatitis or pharyngitis rather similar to the lesions seen in agranulocytic angina. Polymorphonuclears were present (26-62 per cent), and all patients recovered.

Of nine gastric analyses, six showed no free hydrochloric acid, and three showed normal acidity.

Glucose tolerance was decreased in two cases, normal in one.

Basal metabolic studies were variable in four cases: normal, minus 5, plus 12, plus 28.

Pathology: The bone marrow was studied in seven cases; in one, post-mortem. The erythropoietic apparatus appeared normal or moderately hyperplastic. In one case, studied after dying of acute pericarditis, there was "active myelosis throughout". In the others, the myelogenic series was variably hypoplastic. There was a predominance of promyelocytes and myelocytes, the maturer cells being fewer than usual or scanty.

The splenic picture was one of chronic, non-specific inflammation, with diffuse fibrosis, dilatation of sinuses and numerous plasma cells.

The liver showed nothing unusual. The lymph nodes showed chronic, non-specific inflammation. In one case, areas of myeloid activity were present in spleen and lymph nodes.

Examination of a knee joint revealed chronic inflammation of periarticular tissue, synovial membrane, and periosteum.

Bacteriological studies were done in more than half of the cases. In two, each had a positive blood culture, with subsequent cultures sterile. In one, streptococcus haemolyticus was found during an acute follicular tonsillitis. In the other, streptococcus viridans was found during an ulcerative stomatitis. In a third case, culture of an excised lymph node showed streptococcus viridans.

Diagnosis: There has been a tendency to report as Felty's syndrome cases which do not survive critical analysis, and these have been excluded from this report.

Before a diagnosis of Felty's syndrome can be made, three features must be present: a definite history or evidence of chronic rheumatoid arthritis, leukopenia that is shown by prolonged observation to be constant; unmistakable splenomegaly. Adequate studies must be made to rule out those cases where an unrelated arthritis fortuitously complicates the presence of splenomegaly with leukopenia, and those cases of established entities superficially resembling Felty's syndrome; e. g., subacute bacterial endocarditis, septicemia, undulant fever, malaria, aleukemic leukemia.

Treatment: To date, treatment is non-specific, supportive, and symptomatic. It is that given to any patient suffering from chronic rheumatoid arthritis.

Splenectomy was done in two cases. In one, where arthritis had been present five years, preoperative leukocyte counts ranged from 640 to 1,600. Four months after operation leukocyte counts ranged between 10,000 and 12,000, then dropped to 4,000. The patient experienced some improvement in her arthritis and general condition, maintaining her improvement for eighteen months, and then died of pneumonia.

In the second case, where arthritis had been present five years, there was no improvement in the arthritis or general condition, except for two months post-operatively, when the leukocyte count rose to normal levels. Eight months later, the patient presented a picture identical with her preoperative state.

Discussion: Widely divergent views have been advanced concerning Felty's syndrome: that it is a blood dyscrasia; that it is the result of a long-standing infection; that it is produced by some pathological process caused by a noxa simultaneously af-

fecting joints, spleen, and leukocytes; that it is due to an infection with streptococcus viridans; that it is an uncommon manifestation of chronic rheumatoid arthritis; that it is a coincidence of Banti's syndrome with arthritis; that it is an allergic condition in which the varying individual reactivity of the different tissues is the decisive factor, with various germs playing only a provocative role.

Williams theorized from the bone marrow findings in his case, where mature leukocytes were very rare, that a maturation arrest of the leukocytes was the essential cause of the syndrome, the other factors resulting from the chronic infectious processes secondarily engrafted upon tissues whose defensive barriers had been lowered.

Against the theory of a noxa simultaneously affecting spleen, joints, and leukocytes is the case where splenomegaly was present five years before the onset of arthritis.

Against the theory of the syndrome being the end result of a long-standing infection is the case where splenomegaly and leukopenia were present when the arthritis was but ten days old.

Evidence for the streptococcus viridans theory is scanty and unconvincing.

The increasing number of cases points to more than a coincidence of arthritis and Banti's syndrome. Felty refers to Eppinger's exhaustive discussion of this syndrome, where no mention is made of the occurrence of arthritis.

Conclusions cannot readily be drawn from this small collection of cases. It is suggested, from a detailed study of the individual reports, that the evolution of Felty's syndrome may not have been similar in every instance. More cases must be studied from their earlier stages before it can be determined whether this syndrome represents a clinical entity or is merely the end result of varied factors and processes.

SUMMARY

1. A case of Felty's syndrome is presented.
2. The literature is reviewed and discussed.

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IMPLANTED EPIDERMOID CARCINOMA IN THE PELVIC PERITONEUM—
Report of a Case

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This report records a case of spontaneous rupture of a large dermoid cyst of the ovary followed nine months later by a large squamous cell (epidermoid) carcinoma in the cul-de-sac of Douglas.

We believe that the dermoid cyst contained an area of this malignant growth which was not discovered and that it was implanted at the time of rupture in the pelvic peritoneum where it increased

in size to the large tumor found at the second operation.

This case is of interest from several standpoints—first, rupture of an ovarian dermoid; second, implantation of squamous cell epithelioma in the peritoneum, and, third, the complete absence of peritoneal adhesions demonstrated at the second operation.

REPORT OF CASE

History.—A white female, aged 40, was first observed on May 18, 1940. The patient had been in fair health except for an occasional attack of indigestion, prior to this examination. She was the mother of two children, the oldest 17 and the youngest 5. Both of these pregnancies had been uneventful. The menses were not unusual, lasting from three to four days. There was no menorrhagia or leukorrhea. The patient had a good appetite and no unusual gastro-intestinal, genito-urinary, or cardiorespiratory symptoms. She had never undergone any operation and led a sedentary existence as a housewife. On the morning of May 18, 1940, the patient was suddenly seized with a severe agonizing pain in the lower abdomen, associated with some nausea but no vomiting. About an hour later she was seen by a physician and advised to enter the hospital immediately. Six hours after the onset of pain she was seen in consultation.

Examination.—The patient was a pale, apprehensive female, complaining of pain over the entire abdomen but particularly in the lower quadrants. The temperature was 101° F., pulse rate 100, respiration 22 per minute. The blood pressure was 120/80. The eyes, ears, nose, and throat were negative. The chest, lungs, and heart were normal. The abdomen was semi-rigid and was acutely tender to touch. The tenderness was most marked in the left lower quadrant. On pelvic examination a large mass was felt in the left posterior cul-de-sac.

Laboratory Data.—The urine was negative for albumin or sugar; specific gravity was 1.015, and there were 4 to 5 leukocytes per high power field. The erythrocyte count was 3,280,000, the hemoglobin 65 per cent (Sahli), and the leukocyte count 13,200; differential count showed 81 per cent polymorphonuclear neutrophils, 15 per cent lymphocytes, and 4 per cent monocytes. The blood Wassermann reaction was negative.

Diagnosis.—The diagnosis was ovarian cyst strangulated and immediate operation was advised and accepted.

First Operation, May 18, 1940.—Midline incision below the umbilicus was made. When the peritoneum was opened, the cavity was found to contain a very large amount of thick gray fluid with fat-like globules. The left ovary was the seat of a dermoid cyst which had ruptured; this cyst measured five inches in diameter. There was no adhesion to the cyst and the right adnexa, uterus, and cul-de-sac were perfectly normal. The left adnexa with the cyst and the appendix were removed. The fluid was evacuated from the cavity and the wound closed.

The pathological report was simple dermoid cyst. No microscopic examination was made.

Clinical Course.—The patient improved very rapidly following the operation. There was a moderate temperature reaction, ranging from 99° to 101° F. She was discharged from the hospital thirteen days after the operation. Her convalescence remained uneventful for about a month and then she began complaining of nausea, inability to gain weight, and general weakness. These symptoms persisted and the patient began noticing a turbid vaginal discharge. Her menses were regular, lasting for three days. In December, 1940, six months after her operation, it was noted that the patient had lost five pounds in weight. The erythrocyte count was 3,100,000, hemoglobin 65 per cent (Sahli), leukocyte count 11,200; differential count 73 per cent polymorphonuclear neutrophils, 25 per cent lymphocytes, and 2 per cent monocytes. The urine contained a heavy trace of albumin, with 5 to 10 red blood cells per high power field. A pelvic examination showed the uterus and adnexae to be normal except for a small granulating ulcer on the anterior tip of the cervix.

On January 31, 1941, the patient was seen again. She stated that she had suffered from severe rectal pain for several months and the weight loss had continued. Pelvic examination revealed an increase in the size of the cervix which had a soft shallow ulcer on the posterior lip. The uterus was involved in a fixed mass in the pelvis which filled the cul-de-sac and measured about four inches in diameter. On rectal examination this mass felt very hard and was adherent to the anterior wall of the rectum. Exploration was advised.

Second Operation.—The uterine cavity was curetted. The material thus removed as also the tissue removed from the ulcer on the cervix was reported benign. The abdomen was opened through the old scar. The stomach, duodenum, and liver were grossly

normal. The right tube and ovary were not involved. It was noted with interest that there was no adhesion present in the entire abdomen following the gross soiling with the contents of the dermoid cyst nine months before. The large mass in the pelvis consisted of a hard neoplasm in the cul-de-sac which was adherent to a moderately enlarged uterus anteriorly and the rectum posteriorly. It was obviously impossible to remove this tumor. A small piece of the tumor was taken for microscopic examination and the abdomen closed.

This tissue was reported to be squamous cell (epidermoid) carcinoma.

Microscopic appearance of biopsy from the pelvic tumor.

On February 3, 1941, radium was inserted into the uterine cavity and radiation continued for 3,000 mg. hrs. Following this x-ray treatment was given. This consisted of exposure through four fields, 2 anterior and 2 posterior using 220 K. V. and giving 1,000 r. in each field. The filter was 2 mm. of copper. There was little change in the tumor and the patient continued to complain of rectal pain.

On March 17, 1941, nodules in the scar were noted and the weight loss had continued. Further x-ray treatment was given in this area and on April 10, 1941, intra-uterine radium was used for 3,000 mg. hrs. The superficial nodules decreased in size but no other evidence of improvement was noted. Later a rectovaginal fistula developed and the patient gradually declined. She died on June 17, 1941. Postmortem examination was refused.

DISCUSSION

Spontaneous rupture of dermoid cysts of the ovary is unusual. Cases have been reported where the rupture was not treated and fistulae into the bladder and rectum have resulted.

Malignant change in the epithelial elements are also unusual. It has been suggested that many of these cysts are only grossly examined and that the malignant growth in others has escaped detection. Estimates of the frequency of malignant change have varied from 1 to 8 per cent.

Transplantation of epithelial tissue into the peritoneum is of frequent occurrence and these transplants may be of benign or malignant nature. The best known benign implant is endometrium, and the most frequent malignant implants are from tumors of the gastro-intestinal tract and the ovaries.

The character of the cells demonstrated from this tumor seems to justify the assumption that they originated in the dermoid cyst. Unfortunately the specimen was destroyed shortly after the first operation and was therefore not available for further study. However, the pelvic cavity was carefully cleaned out and no evidence of neoplasm was discovered.

The cervix uteri was also considered as a source of this tumor. Here, however, frequent examinations failed to disclose a growth and two biopsies failed to show evidence of malignancy.

The possibilities of misplaced embryonic tissue in the rectovaginal septum and metaplasia of other epithelial tissues are possible sources which cannot be entirely excluded.

The evidence, however, points to the theory expressed early in this report, and it is our belief that the original dermoid tumor contained an area of squamous cell epithelioma which was transplanted to the pelvic peritoneum when the cyst ruptured.

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MORTALITY FOLLOWING TRANSURETHRAL RESECTION

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During the past decade treatment of prostatic obstruction by transurethral methods has developed into one of the most valuable procedures in urologic practice. Generalized use of the transurethral resectoscope has resulted in lower prostatic mortality in numerous clinics. It has been of especial value in patients of advanced age where a prostatectomy is accompanied by an appreciable mortality and it has definitely become the operation of choice for median bars or glands of small size. The relatively shorter period of hospitalization following transurethral resection when compared to prostatectomy is often of considerable economic importance. It should be emphasized, however, that this procedure is not the operation of choice in all patients with prostatic hypertrophy. In many patients, especially those with prostates of large size, far better functional results are obtained if open prostatectomy is performed. Experience with transurethral resection in recent years has now enabled the urologist to recognize its many limitations. Proper selection of cases and a better application of this valuable operation has produced superior end results.

During the last ten years there has been a gradual decline in mortality following transurethral resection. This, in general, has been due to several factors. The first is the improvement in the instruments and operative technique; second, is increased experience and better selection of cases on the part of the urologists who performed these operations. Many improvements in the instruments have been made. Catheters with inflatable bags have been used to great advantage to control unusual hemorrhage in some cases. The use of the perineal urethrotomy in which a small opening is made in the perineal urethra for insertion of the instrument has practically eliminated the occurrence of post-operative strictures. This also allows the use of instruments of larger caliber, so that more tissue can be removed in a shorter time.

Besides the many technical improvements, one important additional factor has come to be recognized as essential for the reduction in mortality following transurethral resection during the past decade. This most important factor is the increased experience and aptitude of the operator. In the early part of the past decade transurethral resection was attempted by many operators who were not qualified cystoscopists or urologists. This unquestionably resulted in a morbidity and mortality which was appalling. It is now realized that adequate cystoscopic experience in many hundreds of cases is necessary before the operation can be carried out with facility and safety. The operation is highly technical and one must have a thorough understanding, not only of the instruments but of the normal and pathological anatomy of the bladder, vesical orifice and prostatic urethra. Any attempt to perform transurethral resections after only limited use of the cystoscope and a vague understanding of the anatomy is unquestionably fraught with many dangers and results in unnecessary deaths and many unsatisfactory functional results. If the beginner is to avoid the pitfalls of this highly technical procedure, he must spend a number of years training as an assistant to an experienced operator; otherwise, the "beginner's mortality" will be unusually high for lack of experience and proper instruction. As the number of resections done by the operator increases there is a decrease in mortality. Riba, in his study of mortality statistics, points out that of five urologists who have done more than 500 resections, the mortality rate is 1.9 per cent, or less. When this is compared to 25 other urologists whose experience consisted of only 100 to 500 resections, the mortality jumped to 4.1 per cent. It is in this latter group and in the group from 1 to 100 cases that

improvement in mortality is to be hoped for. G. G. Smith has recently written, "Some of the operators who are now most skillful tell us that the mortality in their first one hundred cases was around 10 per cent. It seems to be a definite fact that before an operator learns to do resections satisfactorily, he must sacrifice a number of lives." Smith also states that, "Unless a resident is on a service which does hundreds of resections a year, he will not have acquired sufficient experience to enable him to make good when he does his first few resections in private practice." With previous thorough cystoscopic training and improvement in the technical features, it is now possible to reduce the "beginner's mortality" in transurethral operations.

It is the purpose of this paper to report the experience of the writer in his "first 100 patients" upon whom a transurethral resection was performed. These operations were carried out consecutively while the author was resident on the Urology Service at the University Hospital. During the author's tenure as resident, 22 additional consecutive cases were treated by either perineal or suprapubic prostatectomy without mortality. It should be stressed that these patients are poor risks and similar to those encountered on other charity services. There was no selection of patients before admission, nor were any patients refused admission because they were poor risks. During the period the above 100 patients were operated upon, there were five patients who were in such poor condition that prostatic surgery was not possible. A permanent suprapubic cystostomy was performed in three because the renal function was so diminished the expectancy of life was extremely short. In two others there was such extensive local invasion by the prostatic carcinoma that an operation was not feasible.

Sixty of the 100 patients were admitted in acute retention or with overflow incontinence. An additional thirty cases had varying amounts of residual urine. Five were complicated by the presence of bladder stones and in seven there were diverticula. Carcinoma of the prostate was present in eleven patients. The average age was 67. Many other complications too numerous to mention were encountered. Cardiovascular disease was frequent and thirty-one patients had hypertension with diastolic blood pressure of over 100.

The pre-operative care of such patients is of vital importance. Because of the relatively poor condition of this group of cases, there was an average of 8.2 days of pre-operative treatment. Every effort was made to improve the general condition of most patients before operation. Renal function was improved by inlying catheter drainage and abundant fluid intake. Proper therapy with alkalies was instituted when acidosis was present. Anemia, malnutrition, cardiovascular disease and other complicating conditions were appropriately treated.

In these 100 patients there was a total of 114 transurethral resections performed. In thirteen a second resection was necessary because of persistent residual urine. In one case it was necessary to perform three resections. The average amount of prostatic tissue removed is shown in Chart I.

CHART I

	AVERAGE GRAMS PER CASE
1st 25 cases	19.6
2nd 25 cases	17.6
3rd 25 cases	21.7
4th 25 cases	25.5

Following operation great effort is made to keep infection of the bladder and urinary tract to a minimum. A catheter is inserted immediately and connected to a closed sterile irrigating system so that the bladder can be flushed out at intervals with a mildly antiseptic solution. It is highly important that the bladder does not become distended and there must be no formation of clots to occlude the catheter. Distention of the bladder predisposes to pyelonephritis, septicemia and sometimes death. The catheter in most instances is removed at the end of the first to second post-operative day, providing there is no marked elevation of temperature and there is no bleeding. If a patient is able to void freely, the catheter is not re-inserted until the day before discharge when a test for residual urine is made. If any appreciable residual urine is found or if there is any difficulty in voiding, the catheter is immediately reinserted and left in a few additional days. If more than one to two ounces of residual urine is again found a second resection is performed.

Results: In this series of the author's "first 100 resections" there was one post-operative death, or a mortality of approximately 1 per cent. The following case was the only post-operative death encountered by the author in 100 resections and 22 prostatectomies during his resident year:

R. P. M., age 84, history number 151702, was referred

by Dr. Percy Harris of Scottsville, Virginia, September 1, 1939, with a history of increasing urinary obstruction over one year. Before admission symptoms had become so severe that he voided every few minutes. Examination showed a fairly well preserved, somewhat lethargic, senile white man. Prostate was moderately enlarged with no evidence of malignancy. Residual urine was 200 cc. Kidney function was excellent with 40 per cent phenolsulphonphthalein excretion in the first 30 minutes. His hemoglobin was 85 and r.b.c. 4,600,000. Blood urea was 60. Seven days after admission a transurethral resection was carried out without difficulty, although the anesthesia was not satisfactory. Thirty grams of tissue were removed. The patient was returned to the ward, at which time moderate bleeding occurred so that it was necessary to aspirate clots from the bladder and give a blood transfusion. Bleeding continued and another transfusion was necessary the following day. The second day after operation the hemorrhage had practically subsided, but the temperature had reached 102.4. His pulse became irregular and the blood pressure began to fall. He died in shock the third day after operation. A blood urea taken on the morning of death was 230. The white blood count was 12,400. There was tenderness over the kidneys and pyelonephritis had evidently developed following the operation. Sulfanilamide unfortunately was not tried and in retrospect may have prevented this unfortunate death.

Ninety of the ninety-eight* living patients have either returned to the Clinic or answered a follow-up questionnaire. On discharge from the hospital urinary incontinence of some degree was present in fifteen cases. In two of these this incontinence was inevitable due to invasion of the external sphincter muscle by carcinoma. In seven of the remaining cases the incontinence disappeared soon after the patients left the hospital. In three it was of such small degree that urine was only lost on undue coughing or straining. In the last three patients incontinence was considerable and at the time of the follow-ups there was as yet no improvement.

Incontinence following transurethral resection may be due to many factors of which three are most probable. The first is cutting too far down into the prostatic urethra with the wire loop so as to damage the external sphincter muscle. This injury usually results in permanent incontinence. The second cause of incontinence may be due to leverage of the relatively large resectoscope instrument through the rather rigid triangular ligament. To perform the operation satisfactorily the instrument must be moved from side to side and up and down so that there is considerable leverage upon the triangular ligament. This may produce an undue stretch or temporary paralysis of the sphincteric muscle. It is lastly noted that temporary incontinence sometimes occurs after the use of traction bags to control hemorrhage. It is possible that these bags pull against the triangular ligament (external sphincter). It is of interest that traction bags were used in nine of the fifteen cases in which incontinence was a complication. It was necessary to use such rubber bags only in a total of sixteen cases, a number 24 French straight catheter being used in all the other cases.

Six patients developed a temporary post-operative stricture but all responded promptly to dilatation. It is important to pass sounds in all patients having transurethral resections at least once during the first few months after operation. This annoying complication may be prevented by performing the resection through a perineal urethrotomy, especially in patients who have urethras of small calibre. It was thought advisable at the time to discharge sixteen patients from the hospital who were still carrying more than one ounce of residual urine. Eight have since returned and the residual was found to have disappeared. In three of the remaining eight a diverticulum was the cause of the residual. Three had known neurological bladders and the resection was performed with the knowledge that the result would not be entirely satisfactory and complete emptying of the bladder doubtful. The two remaining patients had only two ounces residual on discharge and have not returned to the Clinic for re-examination. Other than the above cases, the functional results have been entirely satisfatcory in approximately 90 per cent of the one hundred cases who underwent transurethral resection during this period.

SUMMARY

Mortality following transurethral operation in general has been discussed and it is pointed out that use of the resectoscope has resulted in a lowering of the mortality in numerous clinics. This operation has been of especial value in patients of advanced age as well as those with glands of small size or median bars. The shorter period of hospitalization has been of considerable economic importance. A low mortality is obtained only by operators who have

*One patient, A. S. Q., age 65, No. 150508, who had a small resection consisting of only 2 or 3 grams of tissue during the fulguration of a large bladder tumor died 6 weeks later. While receiving deep x-ray therapy there was gradual obstruction of his lower ureters from the tumor which resulted in the slow development of uremia and death.

had considerable cystoscopic training. The operation is of highly technical nature, and, in general, the mortality of the operator's first hundred or so cases is frequently formidable. It has been stressed that patients must be selected for transurethral resection and that this operation in no way supplants perineal and suprapubic prostatectomies when they are indicated in instances of large adenomas, severe infection, etc. In this report the writer summarized his experience in his "first one hundred patients" upon whom a transurethral resection was performed. In this series the operative mortality was 1 per cent. A summary of these cases and the results obtained has been presented.

UNDULANT FEVER WITH SPECIAL REFERENCE TO THE USE OF BRUCELLA VACCINE IN DIAGNOSIS AND TREATMENT

Report of a Case

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It is with full knowledge of the limitations of a series of one case, but with the desire to show the usefulness of the intradermal test for undulant fever, that this paper is presented. Only by means of this intradermal test could diagnosis be established and therapy be instituted on a patient who had four attacks of a prostrating illness over a two-year period.

The patient, a 26-year old white male, married, employed as a hospital attendant, first became ill in July, 1939, at which time his complaints were chills, fever, nausea and vomiting, anorexia, and loss of weight. Initial physical findings are not known to us. He was observed for five days at his place of employment, then transferred to another hospital for further study. Physical examination on admission to this institution was negative except for evidence of recent weight loss and scattered rales in both lung fields. Laboratory findings were: WBC 13,500, negative urinalysis. Blood cultures were negative on several occasions, *as were all agglutinations*. An x-ray of the chest showed nothing of significance, although fluoroscopy showed some elevation and fixation of the right diaphragm. For this reason a liver infection was suspected, but this diagnosis was never proven. The patient was treated symptomatically, given frequent intravenous injections of glucose. He ran a slowly subsiding febrile course for three weeks; was discharged at the end of five weeks.

Following a slow convalescence, the patient was symptom-free until March, 1940, at which time the same symptom complex reappeared. He was hospitalized at his place of employment and ran essentially the same course as with his initial illness. Physical examinations and laboratory studies were made at this time but the results are not known to us. No definite diagnosis was made.

The next episode of illness occurred in January, 1941, again with the same clinical picture. On this occasion the patient was hospitalized in a third institution where physical examination again revealed nothing of significance. Laboratory findings were: WBC 12,500, with 70 per cent PMN; urinalysis was negative. Blood cultures and stool cultures on several occasions were negative, *as were all agglutinations*. X-ray of the chest again was negative and fluoroscopic examination revealed nothing of significance. Proctoscopic examination was done and was negative. A liver infection of some sort was again considered, the patient was treated symptomatically, ran a febrile course for two weeks and was discharged after seventeen days.

Again a slow convalescence ensued. The patient obtained employment as an attendant at the Lynchburg State Colony in April, 1941, and enjoyed fairly good health until September, 1941, at which time he complained of malaise, anorexia, and slight weight loss, which persisted for about a week prior to his admission to the Colony Medical Center. On admission the patient complained of general malaise, arthralgia and myalgia, frontal headache, and chilliness but not chills. Admission temperature was 100.2°F., pulse was 90, respirations 22. Physical examination revealed an individual who had obviously lost weight, but who was not in acute distress. The pharynx was injected. A few scattered crepitant rales were heard throughout the lung fields. There was some tenderness over the splenic area and the

spleen was thought to be palpable. There was no evidence of any joint pathology. Admission blood count showed WBC 11,770 with 72 per cent PMN. RBC was 4.0, HBG 70 per cent (Sahli method.) Urinalysis was essentially negative.

Forty-eight hours after admission, the patient had a severe chill with a temperature elevation to 104°F. and an exacerbation of all symptoms. These chills recurred approximately every thirty-six hours with temperature reaching 104°-105°F. At no time were blood smears suggestive of malaria. Three blood cultures and three blood agglutinations, taken during periods of chills, were all negative. Blood serology was negative as were several stool cultures. An x-ray was taken of the chest and showed nothing of significance, although later on there was clinical evidence of right diaphragmatic lag and some fluid at the right base, anteriorly. Several blood smears were sent to Dr. Walter J. Crocker, hematologist of the Philadelphia General Hospital, who reported a Schilling Index of 34, a multiple index of 544, stating the patient was sick enough to die, if the infection were pyogenic in nature. Dr. Crocker found no evidence of malaria, suggested typhoid fever as a possibility; concluded his report with the remark that he had seen several similar blood pictures in the past in patients who had run a similar course and had never been diagnosed.

Despite the fact that agglutinations for B. Melitensis were negative on three separate occasions, there were several clinical observations made which pointed strongly to the diagnosis of undulant fever. These were: (1) a rather typical undulating temperature curve, (2) persistent obstipation, (3) profuse sweats with a characteristic lactic acid odor, (4) intermittent chills, (5) arthralgia and myalgia, (6) evidence of pulmonary infection without evidence of a frank pneumonia.

With these observations pointing to the diagnosis of undulant fever, some Brucella vaccine was obtained and an intradermal test was made, using 0.02 cc of the vaccine. Controls were run on two normal individuals. At the end of forty-eight hours there appeared at the site of injection on the patient an area of erythema and induration, with exacerbation of all symptoms. The controls showed no local or systemic reaction. Five days later, the test was repeated in similar fashion with identical results.

With the intradermal test positive, a diagnosis of undulant fever was established and the vaccine then employed as a therapeutic agent. An initial dose of 0.1 cc was administered intramuscularly and repeated every three days, increasing the dose 0.1 cc each time, until a maximum of 0.7 cc had been administered. Following the first two injections, the patient experienced a marked exacerbation of all symptoms, with a severe chill and temperature rising to 104°F. The last five injections caused no significant reaction, other than some local soreness.

Following the institution of vaccine therapy, the patient noticed marked relief of all symptoms, the temperature gradually subsided and remained normal after the third injection. The patient was allowed out of bed after the fourth injection; was ambulatory two days prior to the last injection. Vaccine therapy was started sixteen days after admission to the hospital. Total hospitalization covered four weeks. Vaccine therapy was not begun during the acute phase of the disease as it is not considered advisable to use this form of therapy while the patient displays hyperpyrexia and other acute manifestations of the disease. The only other form of therapy employed was intravenous glucose, one blood transfusion of 500 cc, and 2 cc of liver extract intramuscularly every other day for ten days.

At the time this paper is written, the patient has returned to work, states that he feels better than he has felt at any time during the past two years. Objective improvement is marked. Blood count on discharge showed WBC 10,300, with 70 per cent PMN. RBC was 4.44 with HBG 88 per cent. The patient's usual weight of 124 pounds had fallen to 105 during his illness. On discharge he weighed 118 pounds.

SUMMARY

1. A case of undulant fever is reported, previously undiagnosed, with repeated negative blood agglutinations for B. Melitensis.

2. A prolonged febrile course, accompanied by profuse sweats with a lactic acid odor, persistent obstipation, intermittent chills, arthralgia and myalgia, and evidence of pneumonitis is strongly suggestive of undulant fever.

3. Diagnosis of undulant fever may be made by means of an intradermal skin test, using 0.02 cc of Brucella vaccine. A positive reaction is characterized by an area of erythema and induration, with exacerbation of all symptoms, occurring within forty-eight hours.

4. Brucella vaccine may be employed as a thera-

peutic agent in undulant fever, using 0.1 cc intramuscularly as the initial dose and increasing by 0.1 cc every third day until a maximum of 0.7 cc has been given.

METRAZOL IN BARBITURATE POISONING—A CASE REPORT*

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Since the discovery of barbituric acid and its derivatives, these products have come to be used extensively as sedatives and hypnotics. The popularity of these drugs as well as the laxity of laws governing their use in many states has given rise to numerous cases of poisoning and attempted suicide by over-dosage of the various barbiturates.

In ordinary doses, these drugs induce natural sleep, frequently without subsequent depression. In larger doses, the unconsciousness is deepened and lengthened without other organs than the central nervous system being involved. In large doses, symptoms of mental confusion, nausea, muscular weakness and incoordination followed by complete narcosis occur. The heart and respiration are depressed. Cyanosis, respiratory failure, coma and death terminate the picture.

Various preparations have been advocated, experimentally and clinically, as antidotes for barbiturate over-dosage. These analeptics may be divided into three groups:

1. Those agents which act primarily on the peripheral circulation and thus indirectly aid a depressed respiratory center, such as ephedrine and epinephrine.

2. Those agents which act directly on the medulla, such as metrazol, picrotoxin, caffeine and carbon dioxide.

3. Those agents acting directly on the "sleep center", such as picrotoxin and metrazol.

Pharmacologic studies seem to support the view that the depression resulting from barbiturate over-dosage involves chiefly the hypothalmus and the basal ganglion regions. Therefore, metrazol and picrotoxin would theoretically be the analeptics of choice.

In choosing between these two drugs, it would seem that metrazol possesses certain advantages over picrotoxin. Chemically, this drug is pentamethylenetetrazol. It is a stimulant almost as powerful as picrotoxin, but not quite as prolonged in its action clinically. There is no latent period and the maximum effect is exerted almost immediately after injection. This practically eliminates the danger of convulsions from over-dosage which is present in the use of picrotoxin because of its delayed "peak" action.

We have recently had occasion to see this theoretical antagonism of metrazol to barbiturate over-dosage demonstrated in a most satisfactory manner.

CASE REPORT

Mrs. Z., a white female, married, age 40, was seen at her home at 10:00 A. M., August 13, 1941, by her family physician (F.B.T.). When seen she was in a totally unconscious condition. Her past history was non-contributory. Her husband stated that she had awakened him about 11:00 P. M. the night before, fumbling for a light switch. Thinking her confused in the dark, he had put her to bed and had not become alarmed until the following morning when she could not be aroused.

The patient was rushed to the hospital where examination disclosed a well-developed white female in a totally unconscious condition. The breathing was stertorous and there appeared to be much pulmonary congestion. The pupils were normal in size and did not react to light. All reflexes were absent. The rectal sphincter was relaxed. The Hb. was 95, RBC 5,000,000, WBC 22,000 with 90 per cent polynuclear neutrophiles. B. P. was 90/60. During the day the temperature rose to 105°F., and a spinal puncture was done because of the possibility of a brain lesion. This showed normal dynamics, globulin negative, sugar normal, cell count 3 lymphocytes.

Treatment consisted in the application of body heat, aspiration of mucus, elevation of the foot of the bed, and atropine sulphate and glucose intravenously. The response to this regime was not satisfactory, the patient remaining in a totally unconscious condition with respiration and pulse rapidly becom-

*Read before the Patrick-Henry Medical Society, October 3, 1941.

ing worse. Although it could not be proved, it was felt that this was a case of barbiturate poisoning. The patient was seen in consultation about 9:00 P. M., and the use of metrazol was suggested. She was given 5 cc. intravenously and almost immediately the patient moved her head and attempted to turn in bed which was the first movement of any kind since her admission. The metrazol was repeated in doses of 2 cc. every two hours with rapid improvement in the pulse and respiration. Convalescense was uneventful. After recovery the patient admitted taking twenty-five 0.1 gm. delvinal sodium capsules the night before admission.

Summary and conclusions:

1. Recovery is reported in a case receiving a large dose (2.5 gm.) of delvinal sodium.

2. The theoretical use of metrazol as an antidote to barbiturate poisoning proved effective in this case after the failure of other methods.

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STUDIES OF IRRADIATION EFFECTS ON CANCER CELLS

I. Preliminary Report:*
The Production of Liver Cancer in White Rats†

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For many years the study of x-ray and radium effects on tumor cells of experimental animals has been attempted in many laboratories. However, readily reproduceable tumors are chiefly sarcomas and their bizarre and atypical histologic pictures have interfered with accurate interpretation of results of irradiation. Many types of sarcoma can be produced, but until recently no readily reproduceable epithelial malignant tumor of a large internal organ has been developed in small animals.

For the study of irradiation effects on cancer cells, it is necessary to have such an epithelial cancer reproduceable in large numbers of small laboratory animals, such as rats, so that irradiation effects may be produced in large groups of animals with proper controls.

Liver cancer of high incidence in white rats was first experimentally produced by Sasaki and Yoshida,[1] in 1935, who fed white rats ortho-amino-azotoluene with a polished rice basal diet. In 1937 this work was confirmed by Kinosito[2] except that the tumor was produced by feeding dimethyl-amino-azobenzene (butter-yellow). Since that time similar results have been obtained by other Japanese workers,[3, 4] and, in this country, by Sugiura and Rhoads at Memorial Hospital, New York.[5]

In order to study the effect of 220 kilovolt x-rays on living cancer cells in comparison with normal cells of a comparable tissue, production of this liver cancer was attempted in our laboratories. The method of induction of this tumor used by Sugiura and Rhoads was followed very closely in order to obtain an incidence of tumor as high as possible.

EXPERIMENTAL

Because Rockland Farm white rats from Long Island were used by Sugiura and Rhoads, fifty of

*This study was made possible by a Virginia Academy of Science grant-in-aid which is gratefully acknowledged.
†Read before the Medical Section, Virginia Academy of Science, April, 1941.

these animals were obtained for this experiment. A second group of fifty animals from the Medical College of Virginia Physiology Department were also used. This latter strain is a mixture of white and brown rats, hooded type, based on an original strain from Wistar Institute and wild rats. The cages and watering devices used are described by Main.[6] A basal diet of Texas brown rice was used throughout the experiment. The rice was coarsely ground and to it was added the dimethyl-amino-azobenzene in 3 per cent olive oil solution to the amount of 20 cc. per kilogram of rice. Approximately 7 grams of this rice-butter-yellow-olive oil diet was fed to each rat each day and this was supplemented by a small cube of fresh carrot approximately 2-4 grams in weight per rat per day. Water was permitted *ad lib.*

The hundred animals were divided into four groups. Group I, composed of ten control animals, received no x-ray, but remained on the experimental diet and were sacrificed early in order to determine the extent and type of cirrhosis of the liver. Group II received no x-ray and was composed of fifteen control animals which were permitted to survive on the diet for from four to six months and sacrificed for study of the liver cancer incidence and histological structure without x-ray changes. Group III was composed of fifty animals which received x-ray after three months of the experimental diet and before tumors of the liver could be palpated by abdominal examination of the animals. Group IV constituted twenty-five animals which were x-rayed after tumor development was assumed to be present by examination of animals sacrificed earlier.

Two-hundred kilovolt x-ray was filtered by 1/4 mm. Cu with a distance of 50 cm. The animals were protected by lead plates over the entire body except for an area approximately 2 cm. square on the right side immediately over the largest portion of underlying liver. The rats were anesthetized lightly with nembutal by intraperitoneal injection to prevent motion during irradiation. Two animals were lost by hypersensitivity to nembutal. The rats which received x-ray before tumor could be palpated in the abdomen (Group III) received 2,000 roentgens in one dose at the rate of approximately 100 roentgens per minute. The other irradiated group, Group IV, were treated after tumor development was believed to have occurred by indications in sacrificed animals and by palpation of the abdomen, and received 1,000 roentgens at each of two doses separated by an interval of one week.*

RESULTS

Fifteen animals were lost by pneumonia, middle ear disease, toxicity of the butter-yellow diet, and nembutal anesthetization, leaving a group of eighty-five animals from the original 100. The incidence of cancer in the livers of these animals is shown in Table I which is based upon the histologic examination of the livers of eighty-five rats. It will be noted that in calculation of percentage incidence the control group I has been excluded due to the fact that these animals were all killed early in the experiment and were not exposed to the effects of butter-yellow more than from a few days to approximately one month and, therefore, should not be included in the final results.

Disregarding the source of strain, there are found 80 per cent incidence of carcinoma of the liver in the eighty-five surviving rats. When the two strains are separately considered, of seventy-eight animals, forty-one surviving were of the Rockland Farm Long Island strain and thirty-seven of the Medical College of Virginia strain. Thirty-five of the former and twenty-eight of the latter showed carcinoma of the liver. This indicates that the Rockland Farm strain was more susceptible to the carcinogenic effects of the butter-yellow, since 85 per cent incidence occurred in this strain as compared to 75 per cent in the Medical College strain.

It will be noted by examination of the table that there is no significant difference in tumor incidence between x-rayed groups and non-irradiated controls. It is possible that this lack of x-ray effect on incidence is due to the late exposure to x-ray during the experimental period, thereby permitting the carcinomas of the rat livers to progress considerably before irradiation. Furthermore, in this preliminary experiment the animals were not permitted to survive long enough after x-ray treatment to determine whether or not it would have any effect upon the mortality from cancer.

The cytologic changes in the liver cancer as compared to the changes in the surrounding more or less normal liver cells are being studied and will be

*The enthusiastic cooperation of the members of the X-Ray Department staff is gratefully acknowledged. All irradiation of these rats was carried out by them under the direct supervision of Dr. F. B. Mandeville, Professor of Radiology.

TABLE I

Incidence of "Butter-yellow" cancer of liver in rats.

GROUP	NO. OF RATS	SURVIVED EXPERIMENT	LOST BY INFECTION, ETC.	INCIDENCE OF LIVER TUMORS NUMBER	PER CENT
I. (Control)	10	7	3	0	—
II. (No x-ray)	15	12	3	10	83%
III. (x-ray)					
a—less than 30 days after	50	37	5	31	80%
b—more than 30 days after		8 (45)		5 (36)	
IV. (x-ray)					
a—more than 30 days after	25	7	4	6	80%
b—more than 30 days after		14 (21)		11 (17)	
TOTALS	100	85	15	63	80%*
Rockland Farm strain	41	—	—	35	85%
Med. Col. Va. strain	37	—	—	28	75%

*The percentage of incidence of tumors is based on the total of 78 rats surviving the experiment and excluding the 10 control animals of Group 1. This group was not permitted to survive long enough to develop tumors of the liver.

The final per cent under "Totals" above represents the average of all animals.

the subject of a later report. Further studies also are being undertaken to determine the effect of x-ray irradiation upon the incidence of this type of liver cancer by repeated fractional doses over the liver for a longer period of time during the experimental period and starting at an earlier period in the experiment.

SUMMARY

The work of previous investigators on the carcinogenic activity of dimethyl-amino-azobenzene in the production of cancers of the liver in white rats has been confirmed.

An incidence of 80 per cent cancers of the liver was obtained as an average in two strains which showed 85 per cent incidence for the Rockland Farm strain and 75 per cent for the Medical College of Virginia strain.

No significant reduction of incidence or mortality from cancer of the liver was produced by the administration of 2,000 roentgens of 200 kilovolt x-ray.

Further studies are being conducted on the effects of x-ray on this parenchymal liver cancer.

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AN EVALUATION OF THE OPERATION OF THE PREMARITAL LEGISLATION IN VIRGINIA

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and
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In the 1938 session of the Virginia General Assembly a bill was introduced requiring a general medical examination for persons contemplating matrimony, including an examination for syphilis, gonorrhea, and other venereal diseases. The State Medical Society opposed this legislation because it realized the improbability of proper enforcement. In this opinion the State Department of Health concurred. The bill was not passed.

In the years between the 1938 and 1940 sessions of the General Assembly the Syphilis Committee of the State Medical Society painstakingly investigated the general subject of premarital legislation and reviewed the experience of states having such laws. One of the members of the committee drafted a bill which was agreeable to the various civic bodies and other lay organizations interested in this subject. This proposed legislation also had the unanimous approval of the State Medical Society's House of Delegates and was endorsed by the State Department of Health. The bill was enacted by the General Assembly of 1940 and became effective on August first.

Since the enactment of this legislative act the State Department of Health has had a full year's experience with the administration of the law; also ample opportunity to evaluate its worth as a syphilis control measure through statistical analysis of the serological examinations made on marriage applicants, and through the follow-up of those individuals infected with syphilis who under the terms of the act have married. Based on this experience this report has been prepared.

Many authorities have stated that Virginia's Premarital Examination Law was unique. This statement can be attributed to the fact that the act permits, without penalty to the individual and without violation of medical confidences, persons infected with syphilis to marry. Many of the marriage examination laws that have been enacted have prohibited persons with syphilis from marrying, and in turn many of these legislative acts have been objected to on this point by public health authorities.

This legislation not only placed definite obligations on the State Department of Health and the physicians of the State but also upon individuals seeking license to marry, and on the clerks of the courts of the Commonwealth. Upon individuals seeking license to marry, the act stipulates two requirements. First, that within 30 days prior to the marriage they must have a serological test performed by a licensed physician. Second, the law requires that if the applicant be infected with syphilis and marries, he must agree to take treatment as long as the State Health Commissioner deems treatment necessary. A violation of this section is a misdemeanor. Thus, the obligation on the parties applying for a marriage license is simple.

The family physician, the clinic physician, or health officer making the examination on these individuals is required to perform certain specific duties under this legislation. The first of these is to send a specimen of the applicant's blood to an approved laboratory for a standard serological test. If this specimen is reported as negative, the physician gives the applicant a signed certificate to be delivered to the clerk of the court in Virginia. In addition, the physician must execute a certificate stating that he has complied with this requirement and attach to the certificate the laboratory report, or a copy of such report. These are sent to the State Department of Health.

However, if the applicant's blood specimen is reported as positive, the physician is required to take a thorough medical history, perform a physical examination and take another specimen of blood for serological examination to determine whether the applicant has syphilis. If the physician or applicant desires, a third test or more may be made.

After these procedures, if a diagnosis of syphilis is made, the physician must inform the applicant of his status. Then, if the applicant still wishes to

marry, it becomes the duty of the physician to inform both parties to the marriage of this fact and of the possibility of transmitting the disease to the marital partner and to their children.

If both parties having been so informed still wish to marry, the physician is required to certify that these duties have been accomplished. The statement signed by the physician and the laboratory reports are then sent to the State Department of Health. The physician then gives a certificate to the applicants to take to the clerk of the court, which certificate does not disclose the medical findings, but merely informs the clerk of the court that the applicants have complied with the law. In fact, the same certificates are being used for applicants who are infected with syphilis and those who are not.

The law also requires that if a physician is treating a person infected with syphilis who married under the terms of the law, or the spouse of such a person, that he, the physician, shall give such information with reference to treatment or any failure or refusal to continue treatment, as the State Health Commissioner may deem necessary in carrying out his duties under the law.

On the clerk of the court, the premarital law imposes a penalty for issuing a marriage license unless there has been filed with him a statement from the physician that the party has complied with the requirements of the law. Other statutes of the Code of Virginia require that the clerks of the courts send a copy of the license and the marriage certificate, signed by the minister or judge, to the Bureau of Vital Statistics of the State Department of Health.

Despite the seeming complexities of the legal requirements of this statute the Department can state that the cooperation of the physicians and the court officials has been splendid. In no instance has a physician or court official failed to cooperate. The mistakes that have occurred have been of a minor nature, and were chiefly errors in the execution of the forms, omission of identification data, acceptance of reports from non-approved laboratories, etc. Such occurrences were to be expected due to the newness of the procedure. As the year progressed the administrative procedures in connection with the law became smoother and such errors have been less frequent.

Of the parties concerned, perhaps the greatest obligations are placed on the State Department of Health. It is the duty of the Department to approve laboratories for the performance of the serological tests and to file, and keep confidential, the certificates and the laboratory reports received from the physicians. The most difficult duty imposed is the investigation of all persons infected with syphilis who marry, to ascertain if they are under treatment. With a yearly average of 30,000 marriages in the State, and with 1,894 cases of syphilis already reported from the examination of this group, the magnitude of this task can easily be appreciated.

Through this legislation, serological examinations have been made on 52,853 individuals. Of this number, 38,434 were residents of the State and 14,419 were non-residents. All of the individuals who married under the terms of the statute were informed concerning their status as to infection. For those individuals whose first serological examination was positive the test procedure has been repeated, a physical examination made and the person's medical history obtained, before a diagnosis of syphilis was made. In cases where a diagnosis of syphilis was established, both parties to the proposed union were informed of the fact and were instructed concerning the importance of treatment for their infection, not only to themselves but to their offspring. This information is of great importance for females in child-bearing age groups, for without such information many of those who were infected would bear congenitally maimed or crippled children.

Table I shows the results of the premarital examinations divided by color, sex, and residence of individuals. From an analysis of the table of premarital examinations by place of residency, it is observed that of the 14,419 non-residents examined, 176 or 1.2 per cent were syphilitic. Of the 38,434 residents examined, 4.5 per cent were found to be infected. The difference in the per cent between the residents and non-residents of Virginia in the total column can be attributed to the large proportion of Negroes, who have a much higher rate than the white, in the resident group. Examination of the rates for the white and Negro separately reveal that the rates for the resident and non-resident groups show no marked difference when the numbers are large enough to be significant.

From Table II, giving the distribution of individuals examined by age, color, and sex, it should be noted that 44,113, or 83 per cent, of the total examinations were made on individuals 30 years of

TABLE I
PREMARITAL EXAMINATIONS
DISTRIBUTION OF INDIVIDUALS BY RESIDENCE—COLOR—SEX
August 1, 1940, through June 30, 1941

	WHITE						COLORED						TOTAL		
	MALE			FEMALE			MALE			FEMALE					
	Neg.	Inf.*	% Inf.	Neg.	Inf.	% Inf.	Neg.	Inf.	% Inf.	Neg.	Inf.	% Inf.	Neg.	Inf.	% Inf.
Residents of State of Virginia	14,174	124	0.9	14,442	137	0.9	3,986	729	15.5	4,114	728	15.0	36,716	1,718	4.5
Out-of-State	6,778	54	0.8	6,910	58	0.8	295	25	7.8	260	39	13.0	14,243	176	1.2
Total	20,952	178	0.8	21,352	195	0.9	4,281	754	15.0	4,374	767	14.9	50,959	1,894	3.6

*Infected. Diagnosis of syphilis made by physicians after positive laboratory report.

age or under—the group to whom this knowledge is most important. Moreover, since it is generally accepted that 50 per cent of all new cases of syphilis occur in the age group 21 to 30, the examination of these individuals is particularly valuable in efforts to control the disease. Without this legislation, many of the 1,357 individuals found infected in this age group would never have been aware of their infection and, therefore, would not be under treatment. It is of interest, too, to note that the infection rate among females of child-bearing age is approximately the same as the rate determined for that group in previous prevalence studies made in Virginia.

In the final analysis, 261 or .9 per cent of the white residents examined were found to be infected, and 1,457 or 15 per cent of the colored residents were diagnosed as having syphilis—a total of 1,718 infected or 4.5 per cent of the 38,434 residents examined during the first eleven months' experience. Of the non-resident group, 176 or 1.2 per cent gave evidence of infection and their respective health departments were notified in accordance with the procedure in intra-state case notification.

Many persons have expressed the opinion that this legislation would reduce the number of marriages in the State and tend to increase the number of illegitimate births. From information obtained from annual reports of the Department's Bureau of Vital Statistics, we find that since 1930 marriages

TABLE II
PREMARITAL EXAMINATIONS
DISTRIBUTION OF INDIVIDUALS BY AGE—COLOR—SEX
August 1, 1940, through June 30, 1941

	WHITE						COLORED						TOTAL		
	MALE			FEMALE			MALE			FEMALE					
	Neg.	Inf.*	% Inf.	Neg.	Inf.	% Inf.	Neg.	Inf.	% Inf.	Neg.	Inf.	% Inf.	Neg.	Inf.	% Inf.
Under 21	3,184	13	0.4	8,188	37	0.4	1,041	96	8.4	2,217	252	10.2	14,630	398	2.6
21–30	13,519	92	0.7	10,658	110	1.0	2,345	403	14.7	1,604	354	18.1	28,126	959	3.3
31–40	2,789	37	1.3	1,781	38	2.1	493	153	23.7	342	101	22.8	5,405	329	5.7
41–50	847	22	2.5	494	5	1.0	199	60	23.2	125	40	24.2	1,665	127	7.1
50+	613	14	2.2	231	5	2.1	203	42	17.1	86	20	18.9	1,133	81	6.7
Total	20,952	178	0.8	21,352	195	0.9	4,281	754	15.0	4,374	767	14.9	50,959	1,894	3.6

*Infected. Diagnosis of syphilis made by physician after positive laboratory report.

in Virginia tended to follow a definite trend until the enactment of premarital legislative acts by neighboring states, at which time there was a sharp rise in marriages. The marriage statistics for the year 1930 listed white marriages at 17,417; from that year through 1936 marriages increased roughly in proportion to the State's increase in population. In 1936 there were 22,417 white marriages. However, in 1937 marriages jumped to 24,834, an increase of 2,417 over the previous year. In 1938, as more of the neighboring states passed laws requiring premarital examinations, the total rose to 26,225, but the real influence of outside restrictions on hasty marriages was felt in 1939, when adoption of a 48-hour waiting law in Maryland and a 72-hour waiting period in the District of Columbia made Virginia the rush-marriage center for the Eastern States. That year, the number of white marriages, chiefly due to the influx of persons from out-of-state, rose to 42,002. The 1940 total of 43,438 may be considered as being due in part to the rush to beat the deadline of August 1, the date the legislative act became effective.

Meanwhile, the number of Negro marriages, which increased slightly and gradually from 1930 through 1938, jumped from 7,952 that year to 10,716 in 1939. In that classification, the normal through the ten-year period has averaged less than 8,000.

Had the number of marriages in the State continued gradually to increase we could expect approximately 30,000 marriages a year in 1940, instead of the 52,680 that were registered. As yet the marriage statistics for 1941 have not been cleared and tabulated by the Bureau of Vital Statistics. However, upon estimates of the number of marriages based on the premarital records received in the Division of Venereal Disease Control for an eleven-month period, August 1, 1940, through June 30, 1941, there will probably be 29,000 marriages, in a twelve-month period, which estimate still shows an increase over the expected number of marriages if the normal trend for the State on a population basis had continued without being subject to the influence of marriage examination laws by neighboring states.

The number of illegitimate births evidence nothing of statistical significance. In 1930 there were 65.4 illegitimate births for each one thousand live births registered. In 1939 there were 73.6 illegitimate births per one thousand live births. In 1940 the rate was 75.4 per one thousand live births. The Bureau of Vital Statistics reports that there has been a slight increase annually in each year of the ten-year period, 1930-1940. Further, the 1940 increase can hardly be attributed to the influence of the marriage law as the act did not become effective until August 1, 1940. The 1941 figures have not been broken down by legitimacy of birth at the present time, but it is doubted if this legislative act will materially effect them. Further, the rapid population increase in certain areas of the State, due to mobilization and industrial expansion because of the defense program, may alter strict interpretation of the 1941 figures.

Through the requirement of sub-section (d) of the act, which section imposes upon the State Health Commissioner the obligation of approving laboratories for the performance of serological tests, much good has been accomplished in that standards of serological test performance by the participating laboratories have been elevated through the serological evaluation studies. In defining standards for laboratory approval it was decided to follow the criteria recommended by the Hot Springs Conference of serological test performance evaluation as outlined in Supplement No. 9, The Serodiagnosis of Syphilis. In March 1940 an invitation was extended to all laboratories known by previous questionnaires to be performing serological tests—30 laboratories indicated their willingness to be evaluated under the terms of the invitation. Of the laboratories participating, 13 were granted full approval and 19 temporary approval. In the second evaluation study conducted in February 1941, 42 participated and 27 were granted approval.

In August 1940 at the meeting of the State Medical Society the Syphilis Committee recommended that the Department's laboratory render field consultation service in serology to private and semi-private laboratories. In compliance with this recommendation the Department made available the service of the chief serologist for consultation. As mentioned above, it is believed that much has been accomplished through these studies and through the field consultation service to elevate standards of serological test performance.

In this review of the first year's experience with the marriage act, the benefits resulting from this legislation can be summarized briefly. For the laity,

the act has been of great educational value, especially for those individuals who married having been informed as to their status as to infection. For those who were infected (particularly females in the child-bearing age group) knowledge of their infection and of the importance of regular treatment has been of untold benefit. For the Department of Health, the act has served as an additional disease control measure in that 52,853 persons have been given a serological test for syphilis. For the physicians of the State, renewed interest in and improvement in serological test performance by laboratories has been of assistance in that more confidence can be placed in serological test reports as an aid in the confirmation of their clinical diagnosis.

State Office Bldg., Richmond, Va.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient, a 39-year-old colored multipara with five previous children, attended a prenatal clinic when five months pregnant, at which time the findings revealed an essentially normal pregnancy of five months' duration. Because of the lack of transportation she failed to return to the clinic for subsequent visits, although she was seen at home several times during the remainder of the pregnancy by a nurse. At 7:00 P. M. on April 8th, she was delivered of twins spontaneously at home by a midwife. At 8:00 P. M. the placenta had not delivered so a physician was called. There had been no antepartum or intrapartum bleeding, but there was some postpartum bleeding. At the time of the visit of the physician there was only slight vaginal bleeding, the pulse was rapid, and the blood pressure was 90/??. Attempts to express the placenta were unsuccessful. Glucose (500 cc.) was given intravenously. The doctor remained until 10:00 P. M. and then left with instructions to call him again if she did not do well. The doctor was called back at 11:00 P. M. because the patient became restless. On his arrival at this visit the patient was said to be comatose and pulseless, with very little external bleeding. She was given glucose (1000 cc.), caffeine and morphine and referred to a hospital. Profuse bleeding occurred en route to the hospital, where she was admitted at 3:00 A. M., eight hours after delivery. She was in severe shock, blood pressure 60/??, and both placentas were still retained. She died twenty minutes after admission before any adequate therapy could be instituted. Postmortem examination revealed a retained placenta of twin pregnancy (not placenta accreta) and evidences of acute blood loss.

COMMENT

This is an obstetrical death and it has been classified as a preventable death. The first failure is the absence of adequate antenatal care and diagnosis. The presence of twins, had the diagnosis been made, would have indicated a hospital delivery, because of the frequency of postpartum hemorrhage and of abnormalities in the third stage of labor in twin pregnancies.

Perhaps the actual treatment of this case by the physician should not be criticized, for this method of therapy might result in a favorable outcome in in some instances, but unfortunately it did not result favorably in the case under consideration. There is some divergence of opinion regarding the proper method of management of retained placenta, some favoring early manual removal, while others follow the conservative course pursued in the present case. Certainly the outcome may have been different had the patient (along with a group of possible blood donors) been referred to a hospital at 8:00 P. M. Early manual removal of the placenta and blood transfusions would have offered this individual a better chance of survival. Because of the absence of antenatal care, and because of the failure to remove the placenta manually or to refer the patient to a hospital for manual removal and blood transfusions at the time of the first visit, it is felt that the death should be classified as preventable.

The Council
Medical Society of Virginia

The Council of the Medical Society of Virginia held a luncheon meeting in the Richmond Academy of Medicine Building on January 8, 1942, at 1:00 P. M., with the president, Dr. Roshier W. Miller presiding. Others present were: Dr. J. M. Emmett, president-elect; Drs. Julian L. Rawls, J. Morrison Hutcheson, W. C. Akers, W. L. Powell, Alex. F. Robertson, Jr., Andrew D. Hart, and C. B. Bowyer, councilors; Dr. Wyndham B. Blanton, editor; Dr. Dean Cole, chairman of the Legislative Committee; Mr. R. C. Duval, attorney, and the secretary.

Following lunch, Dr. Miller explained that he had planned through questionnaires to secure information from members to determine what changes might be made for the good of the organization and also to visit some of the component societies, but, since the rulings with regard to automobiles as a defense measure and the absence of a large number of doctors, he had decided it would be best to let Society matters "float along" and handle them as they arise.

It was moved to dispense with the reading of the minutes of the last Council meeting (pages 706-7, December, 1941, MONTHLY) and they were approved as printed.

That the Local Committee in charge of the 1942 meeting might get started with their plans, the councilors had been written to and dates set as October 5, 6, and 7. Upon request of the president, these were approved.

Dr. Miller stated that Dr. Ernest G. Scott, one of the vice-presidents, was unable to attend this meeting because of the death of his brother, and, if agreeable to the members, he would like a telegram of sympathy sent him. This was approved.

A request was presented by the secretary for a special appropriation for a new addressograph for the office. Dr. Powell said the Budget Committee had approved this last Fall, in case it was found necessary, and he moved that the appropriation be made. This was seconded and carried.

Dr. Miller then re-appointed Drs. Hutcheson and Powell as the Budget Committee for this year.

The secretary said that the question had come up as to another joint meeting with the West Virginia State Medical Association. Dr. Emmett said he would like to have another of these meetings when conditions are favorable and he was requested to look into the advisability of this question and report at the Fall meeting of the Council.

Dr. Cole, chairman, was then asked to tell the Council something of the work which had been done by the Legislative Committee. He enumerated the following which had received their special attention.

1. A request had come from Dr. J. R. Parker for assistance in the prosecution of a woman who had been found guilty of producing criminal abortion. Motion was made to advise Dr. Parker that the Society has no authority to prosecute such cases but that he might see if help could be secured from the State Board of Medical Examiners. Seconded and carried.

2. The committee had considered a resolution referred from the House of Delegates with regard to drafting suitable legislation governing the medical care of jail prisoners, and the payment of adequate fees to physicians for this work. Motion was made by Dr. Robertson that the Legislative Committee be empowered to confer with the proper committee of the State Legislature, to suggest adequate fees for physicians treating the inmates of jails, as a part of the proposed changes in the legislation for the administration of jails. This was seconded and carried.

3. Dr. Henry Lee of Roanoke had discussed with Dr. Cole the right of an individual to select his own hospital and physician in cases coming under the Workmen's Compensation law, instead of this being done by insurance companies. Dr. Cole said the committee had made a study of this and felt they should not take action but that it should be referred to the Medical Economics Committee. It was moved and carried that this be done.

4. The question of changes in the State laws relating to the office of Coroner, referred by the House of Delegates, had been considered by the Committee, and Dr. Cole said they recommended that this be referred, by a resolution to be adopted by the General Assembly of 1942, to the Legislative Advisory Council of Virginia for study, this Council to consider the whole matter in conjunction with a committee of the Society and the State Board of Health, and report to the General Assembly at its 1944 session with recommendations for any proposed changes in the statutes. After discussion, the Committee's recommendation was accepted.

5. The committee had carefully considered the sections of the Medical Practice Act and felt that it might stay as is, but thought two Amendments, to be known as Nos. 1622-a and 1623-a should be added, to strengthen and clarify enforcement provisions of the Medical Practice Act, and to authorize the use of injunctions against any one found guilty of practicing illegally, and forbidding the practice of medicine without a license. This Committee was authorized to get a bill incorporating these recommendations before the General Assembly at its 1942 session.

Dr. Miller said there was an innovation he wished to make at the next meeting of the Society, if it meets with the approval of the Council, and that is the appointment of a committee from the Council to go over reports of the various committees in advance of the meeting and bring out the recommendations and points which should be discussed in detail, when these are called in the House of Delegates, as he feels this will save much time in the business sessions. The Council

felt this might be of help and approved his adopting this plan for the coming session.

Under new business, Miss Edwards said she had been approached by one of the students of the Medical College of Virginia with regard to the Society placing a congratulatory advertisement in the *X-Ray,* the college annual. As the budget included no appropriation for such purpose, she was asked to present the matter to this body. The Council felt it unwise to undertake this as many similar calls might be made which it would be hard to refuse.

Dr. Blanton, editor, said his attention had been called to "The 1942 Blue Book" published by the *Wisconsin Medical Journal,* and he was so interested in it that he wondered how the councilors felt about devoting one issue of the MONTHLY to the publication of all laws pertaining to the practice of medicine in this State. In such case, it would be necessary to have the service of a lawyer to secure the material and it would probably cost $150 to $200. Upon motion, the editor was given authority to publish an issue of the MONTHLY similar to "The Blue Book" of Wisconsin, this authority carrying the additional appropriation if needed.

A suggestion had been made to have an afternoon session of the 1942 meeting at Catawba Sanatorium, and Dr. Powell, local chairman, thought this might be arranged. This was referred to the Program Committee.

Adjournment followed.

AGNES V. EDWARDS,
Secretary.

Approved:
ROSHIER W. MILLER, *President*
January 19, 1942.

Correspondence

Remuneration of Jail Physicians.

JANUARY 5, 1942.

TO THE EDITOR:

A matter which is in crying need of attention and remedy is the pay for jail physicians in Virginia. Every other state employee in the Old Dominion perhaps has had increase of pay in late years, while the jail physicians have still the same wholly inadequate compensation which they have received for the past century, it may be, and which is so entirely inadequate that it borders on the ludicrous.

The law as it now is—and has been since the memory of man runneth not to the contrary—permits the doctor who ministers to the sick in our jails to charge for his services seventy-five cents *per day* only—not per visit, but per day—even if he be called to the same jail patient three times or more per day, as has been the writer's experience on numerous occasions. The law makers apparently were fearful that some medico might amass too much wealth at this rate, so they cautiously provide that if he treats more than one patient on the same day he can legally charge only *fifty* cents per patient! No provision whatever made for extra pay for night calls, and none for surgical treatment, however extensive it may be.

Examining and prescribing for the patient is, however, the least part of it. Recently it has been decreed that a certain new form shall be used on which to render jail medical accounts. This form is too large to be used on the ordinary typewriter, so for most doctors it must be made out by hand—a separate sheet for each month, and two copies of each, making twenty-four sheets in all. As if this were not burdensome enough, the physician is then compelled to go to the jail register to ascertain the nature of the crime charged against each prisoner treated, and carry out his items into the appropriate column. Why this account's job is saddled upon the medical man has not yet been explained.

But this is not the end of the story. Having complied to the best of his ability with these burdensome exactions, he must go to the sheriff to certify to the correctness of the account, and then before clerk of court to make oath to it. Lastly, it has to be passed upon by the judge. Finally, the harassed medico is told that no matter how large or how small is his account he must not expect payment oftener than once a year!

The above is a true statement of jail medical work, as can be verified by reference to any jail physician. I submit that it is high time our legislative committee be informed of the imposition put upon a not inconsiderable number of members of the State Society—for there must be more than a hundred jails in the cities and counties of Virginia—and something done to induce the Legislature to relieve this deplorable situation.

Very truly yours,

INTERESTED DOCTOR.

Military Medicine

Recommendations to all Physicians with Reference to the National Emergency.

I. Medical Students

A. All students holding letters of acceptance from the Dean for admission to medical colleges and freshmen and sophomores of good academic standing in medical colleges should present letters or have letters presented for them by their deans to their local boards of the Selective Service System. This step is necessary in order to be considered for deferment in Class II-A as a medical student. If local boards classify such students in Class I-A, they should immediately notify their deans and if necessary exercise their rights of appeal to the Board of Appeals. If, after exhausting such rights of appeal, further consideration is necessary, request for further appeal may be made to the State Director and if necessary to the National Director of the Selective Service System. These officers have the power to take appeals to the President.

B. Those junior and senior students who are disqualified physically for commissions are to be recommended for deferment to local boards by their deans. These students should enroll with the Procurement and Assignment Service for other assignment.

C. All junior and senior students in good standing in medical schools, who have not done so, should apply immediately for commission in the Army or the Navy. This commission is in the grade of Second Lieutenant, Medical Administrative Corps of the Army of the United States, or Ensign H. V. (P) of the United States Navy Reserve, the choice as to Army or Navy being entirely voluntary. Applications for commission in the Army should be made to the Corps Area Surgeon of the Corps Area in which the applicant resides and applications for commission in the Navy should be made to the Commandant of the Naval District in which the applicant resides. Medical R.O.T.C. students should continue as before with a view of obtaining commissions as First Lieutenants, Medical Corps, upon graduation. Students who hold commissions, while the commissions are in force, come under the jurisdiction of the Army and Navy authorities and are not subject to induction under the Selective Service Act. The Army and Navy authorities will defer calling these officers to active duty until they have completed their medical education and at least twelve months of internship.

II. Recent Graduates

Upon successful completion of the medical college course, every individual holding commission as a Second Lieutenant, Medical Administrative Corps, Army of the United States, should make immediate application to the Adjutant General, United States Army, Washington, D. C., for appointment as First Lieutenant, Medical Corps, Army of the United States. Every individual holding commission as Ensign H. V. (P), U. S. Navy Reserve, should make immediate application to the Commandant of his Naval District for commission as Lieutenant (J. G.) Medical Corps Reserve, U. S. Navy. If appointment is desired in the grade of Lieutenant, (J. G.) in the regular Medical Corps of the U. S. Navy, application should be made to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

III. Twelve Months Internes

All internes should apply for a commission as First Lieutenant, Medical Corps, Army of the United States, or as Lieutenant (J. G.), United States Navy or Navy Reserve. Upon completion of twelve months interneship, except in rare instances where the necessity of continuation as a member of the staff or as a resident can be defended by the institution, all who are physically fit may be required to enter military service. Those commissioned may then expect to enter military service in their professional capacity; as medical officers; those who failed to apply for commission are liable for military service under the Selective Service Acts.

IV. Hospital Staff Members

Internes with more than twelve months of interneship, assistant residents, fellows, residents, junior staff members, and staff members under the age of 45, fall within the provisions of the Selective Service Acts which provide that all men between the ages of 20 and 45 are liable for military service. All such men holding Army commissions are subject to call at any time and only *temporary deferment* is possible, upon approval of the application made by the institution to the Adjutant General of the United States Army certifying that the individual is temporarily indispensable. All such men holding Naval Reserve commissions are subject to call at any

time at the discretion of the Secretary of the Navy. Temporary deferments may be granted only upon approval of applications made to the Surgeon General of the Navy.

All men in this category who do not hold commissions should enroll with the Procurement and Assignment Service. The Procurement and Assignment Service under the Executive Order of the President is charged with the proper distribution of medical personnel for military, governmental, industrial, and civil agencies of the entire country. All those so enrolled whose services have not been established as essential in their present capacities will be certified as available to the Army, Navy, governmental, industrial, or civil agencies requiring their services for the duration of the war.

V. ALL PHYSICIANS UNDER FORTY-FIVE

All male physicians in this category are liable for military service and those who do not hold commissions are subject to induction under the Selective Service Acts. In order that their service may be utilized in a professional capacity as medical officers, they should be made available for service when needed. Wherever possible, their present positions in civil life should be filled or provisions made for filling their positions, by those who are (a) over 45, (b) physicians under 45 who are physically disqualified for military service, (c) women physicians, and (d) instructors and those engaged in research who do not possess an M. D. degree whose utilization would make available a physician for military service.

Every physician in this age group will be asked to enroll at an early date with the Procurement and Assignment Service. He will be certified for a position commensurate with his professional training and experience as requisitions are placed with the Procurement and Assignment Service by military, governmental, industrial or civil agencies requiring the assistance of those who must be dislocated for the duration of the national emergency.

VI. ALL PHYSICIANS OVER FORTY-FIVE

All physicians over 45 will be asked to enroll with the Procurement and Assignment Service at an early date. Those who are essential in their present capacities will be retained and those who are available for assignment to military, governmental, industrial or civil agencies may be asked by the Procurement and Assignment Service to serve those Agencies.

The maximal age for original appointment in the Army of the United States is 55. The maximal age for original appointment in the Naval Reserve is 50 years of age.

All inquiries concerning The Procurement and Assignment Service should be sent to The Executive Officer, 5654 Social Security Building, 4th and Independence Avenues, S. W., Washington, D. C., and not to individual members of the Directing Board or of committees thereof.

Miscellaneous

"The Foundation Prize"; American Association of Obstetricians, Gynecologists and Abdominal Surgeons.

(1) "The award which shall be known as 'The Foundation Prize' shall consist of $150.00."

(2) "Eligible contestants shall include only (a) interns, residents, or graduate students in Obstetrics, Gynecology or Abdominal Surgery, and (b) physicians (with an M. D. degree) who are actively practicing or teaching Obstetrics, Gynecology or Abdominal surgery."

(3) "Manuscripts must be presented under a nom-de-plume, which shall in no way indicate the author's identity, to the Secretary of the Association together with a sealed envelope bearing the nom-de-plume and containing a card showing the name and address of the contestant."

(4) "Manuscripts must be limited to 5,000 words, and must be typewritten in double-spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis."

(5) "The successful thesis shall become the property of the Association, but this provision shall in no way interfere with publication of the communication in the Journal of the Author's choice. Unsuccessful contributions will be returned promptly to their authors."

(6) "Three copies of all manuscripts and illustrations entered in a given year must be in the hands of the Secretary before June 1st."

(7) "The award will be made at the Annual

Meetings of the Association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the Association. The successful contestant must meet all expenses incident to this presentation."

(8) "The President of the Association shall annually appoint a Committee on Award, which, under its own regulations shall determine the successful contestant and shall inform the Secretary of his name and address at least two weeks before the annual meeting."

JAS. R. BLOSS, M. D., *Secretary*,
418 Eleventh St., Huntington, W. Va.

Public Health Statistics

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for December, 1941, compared with the same month in 1940 and for the period of January through December, 1941, compared with the same period in 1940, follows:

	Dec. 1941	Dec. 1940	Jan.-Dec. 1941	Jan.-Dec. 1940
Typhoid and Paratyphoid Fever	29	17	343	275
Diarrhea and Dysentery	78	70	5,581	1,878
Measles	485	412	35,601	4,171
Scarlet Fever	249	197	1,716	1,781
Diphtheria	122	88	760	709
Poliomyelitis	7	11	154	241
Meningitis	4	4	100	73
Undulant Fever	1	1	16	23
Rocky Mountain Spotted Fever	1	0	34	46
Tularemia	13	9	35	49

TYPHOID CARRIER PROGRAM

During the past year the State Department of Health intensified its program of contacting those persons who in the past had been reported as typhoid carriers. Included in this activity was fact-finding concerning the present social environment and occupation of the carrier.

The local health departments throughout Virginia were furnished a list of suspicioned and known carriers. Investigation by the local units was limited to those still residing in the respective districts. Carriers living in counties without health departments or who had moved from such areas, were followed up direct by personnel of the Departments' Bureau of Communicable Diseases. In cases where the person reported had moved to another state, the authorities there were furnished promptly with the Department's available information in order to complete the investigation.

Histories relating to the past infection and the contacts who developed the disease were obtained in the majority of instances. In obtaining histories in cases under suspicion, efforts were made to determine whether the history was characteristic of the disease and whether at the time the case was reported a laboratory had found the stool repeatedly positive.

In all cases an unbroken occupational chain was obtained; in this way typhoid fever occurring in contacts could be traced to the probable source of infection.

Many carriers were found to have resorted to surgery to eliminate the danger of spreading the disease. Others have limited their activities to those fields where food would not be handled.

Instruction in personal hygiene was given in each case investigated and a complete review of the sanitary measures in the home was undertaken. Typhoid immunization was urged for all those in close personal contact with a carrier.

Many of the older cases originally reported to the Department in years past now are in the inactive file due to death.

Investigations indicate that the actual number of carriers has decreased. Periodically all carriers will be visited by a representative of the State Department of Health.

Woman's Auxiliary
to the
Medical Society of Virginia

President—MRS. E. LATANE FLANAGAN, Richmond.
President-Elect—MRS. H. W. ROGERS, Norfolk.
Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.
Corresponding Secretary—MRS. A. S. LILLY, Richmond.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

The Physician's Wife and This War.

In my inaugural address, I stated that the Auxiliary to the Medical Society of Virginia faced the most challenging year since our organization. That

challenge is now a reality. Our country is at war. We remember Pearl Harber. Being in San Diego as I was on December the seventh and entirely too close for comfort makes me so war conscious I can't wait to call each of you to respond at once to the opportunities that are ours for helping in this emergency. What can we do? As women there is plenty and as the wives of physicians it is just a little more important for us to do the job and do it well. We must make an outstanding contribution in the field of Health Education to every group of organized women to which we belong. My theme for the year "Educate and Evaluate" suggests the very first thing I want to mention. Take the courses of study offered women, meet the requirements, and become teachers. Register for local volunteer service ready to do the thing that needs to be done. Stand by your local Auxiliary President when she plans a joint meeting of all women's organizations—church, civic, social, patriotic, etc.—with a speaker on nutrition approved by your local advisors. Attend your medical auxiliary meetings because it's here you are going to get the information you need to help you in your evaluations. Help cancer control, study the legislative program, and be able to assist our state legislative chairman with understanding. Entertain the soldiers and the wives of physicians in service. Buy Defense Bonds and Stamps. Fighting isn't new to us because our doctors are always fighting disease and we share with them the determination to fight harder for the rest of this year.

Our Board meets January 30 at the Academy of Medicine Building in Richmond at 11 o'clock, and our State meeting is to be in Roanoke, October 5, 6, and 7. Make your plans to come because it is this counseling together that gives us strength for the task that is ours as physicians' wives in this war.

(MRS. E. LATANE) LOUISE W. FLANAGAN,
President, Auxiliary Medical Society of Virginia.

Letter from a Past President.

DEAR AUXILIARY MEMBERS:

It seems such a long time since I have greeted you through the pages of the VIRGINIA MEDICAL MONTHLY—and so very much has happened.

Two years ago we were all excited over the question of Socialized Medicine—do you remember? And today it really seems—well, of not so much importance, surely, facing as we do the most tragic moment in history.

When we think of the suffering and hunger and pain throughout the world, and, since in the Far East it has entered our own lives, we are beginning to realize what we face these coming months. Never before have we, as the wives of medical men, had a greater role to play. Ours must be staunch, brave hearts and willing hands to assist our husbands who are all busy with defense work—many now in service—assist in the community work, Red Cross, and everywhere we are needed.

If Democracy wins it is up to not only the men and boys but women of all ages and classes. We simply do not realize the gravity of the situation and never will, I am afraid, unless we stop thinking that in some way we are especially guided and protected and realize that what happened in France and England can happen here.

Not only must we be glad to work, not only may we with brave hearts meet what comes, but we all have the power to vote and help keep the greatest system of free government the ages have ever known safe for those coming after.

We have a fine President this year and a splendid Board of helpers who are ready at any time to advise and help us. So let us, as an Auxiliary of some of the finest women in the State of Virginia, really work and give. Buy defense stamps and bonds until it hurts. A few less parties, a few less luxuries of life will not hurt us at all.

And now in closing there is one thing I know you have learned — friendship and love. For in the months of suffering I have been through there has scarcely been one week that some one of my Auxiliary family throughout the state has not written to me. I shall not only keep the letters, but the most tender memories of you who took the time from your busy lives to write me words of cheer.

Let us keep smiling, let us keep up our morale, let us keep working and let us all pray that soon peace, a lasting peace, may come to the whole world.

POLLY GRAHAM LATANE.
(MRS. HENRY AUGUSTINE LATANE).

Norfolk Auxiliary.

The Seaboard Medical Society met at the Cavalier Hotel, Virginia Beach, December 2, 3, 4, 1941, and the wives of the members were entertained by the Auxiliary of the Norfolk Society at a luncheon at the hotel on the 3rd, followed by bridge. Fifty members were entertained. On December 4, a Bingo Party was held which was enjoyed by all the members present.

The chief defense work activity which is being done collectively by the Auxiliary is that we have taken charge of one day at Red Cross Headquarters in cutting and assembling hospital garments. Mrs. C. C. Cooley is Chairman of this work.

A Public Relations Tea will be held the 14th of January, in the Library of the Medical Arts Building. To this Tea will be invited members of other organizations through the city.

LILA IDE SMITH.
(MRS. C. C. SMITH).

The Williamsburg-James City Auxiliary

Met with Mrs. B. I. Bell on January 6. We were indeed happy to welcome several of the Fort Eustis doctors' wives to our meeting. The movie "Bobby Goes to School", sponsored by the Auxiliary and shown by a Mead Johnson representative at the Mathew Whaley School was reported to have met with great approval.

Several members are taking the First Aid course given for Defense Work. Captain R. L. Sutton of Fort Eustis gave an interesting and helpful talk on "First Aid".

MRS. E. T. TERRELL,
President, Williamsburg-James City Auxiliary.

Northampton-Accomack Auxiliary.

The regular meeting of this Auxiliary was held on January 6, at the home of Mrs. W. L. Cosby in Painter. Preceding the business session, a lovely luncheon was served by the hostess. Mrs. Holland Trower, president for the current year, presided. The meeting was opened with the Lord's prayer, following which Mrs. Trower made a short talk giving her aims as president and stressing the responsibilities of all the members in the present emergency our country faces.

The minutes of the last meeting were read. The treasurer reported and the chairmen of the standing committees were announced. After the routine business was attended to, a food sale was held which netted $4.20 to the treasury. A delightful musical program followed, presented by Mrs. W. L. Cosby and Mrs. Polk Kellam, violinists, and Mrs. Franklin Gibb, pianist. Those present were Mesdames Critcher, S. S. Kellam, Robertson, Burwell, Green, John B. Mears, Jackson, Denoon, W. B. Trower, Gladstone, B. N. Mears, DeCormis, Cosby, Fletcher, E. H. Trower, Downing, Lynch and Hamilton.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgement of receipt. However, we assume no obligation in return for the courtesy of those sending us the same.

Social Hygiene and Youth in Defense Communities, by MAURICE A BIGELOW. A report on a cooperative study between the U. S. Public Health Service and the American Social Hygiene Association. 16 pages, price 10 cents. Publication No. A410.

An Approach to Sex Education in Schools. No. 1 of a series of bulletins on Education for Family Life prepared by the Education Committee of the New Jersey Social Hygiene Association. 8 pages, price 10 cents. Publication No. A365.

Education for Human Relations and Family Life on the Secondary School Level; A Tentative Program and Correlated Outline with Suggestions for a Briefer Program of Minimum Essentials. No. 2 of a series of bulletins on Education for Family Life prepared by the Education Committee of the New Jersey Social Hygiene Association. 32 pages, price 25 cents. Publication No. A392.

The Art and Science of Nutrition. A Textbook on the Theory and Application of Nutrition. By ESTELLE E. HAWLEY, Ph.D., and GRACE CARDEN, B.S., The University of Rochester, School of Medicine and Dentistry, Rochester, N. Y. St. Louis. The C. V. Mosby Company. 1941. 619 pages. With 140 Illustrations including 12 in color. Cloth. Price $3.50.

Dr. Hawley and Miss Carden have done an excellent piece of work in placing before the student the essential facts of nutrition and diet therapy. The material is presented in an attractive and readable form; in language that is not too technical for the student with no previous nutritional background to understand.

The first part of the book is devoted to Normal Nutrition with chapters on Digestion, Metabolism, Proteins, Fats and Carbohydrates. The Vitamins and Vitamin Deficiencies, is an excelllent chapter, giving a brief history of the vitamins and detailed information as to vitamin requirements, symptoms of deficiencies, best food sources and so on. The material in this chapter is very modern and up-to-date and the newer filtrate factors are named and discussed. Excellent illustrations, some in color, demonstrate graphically the deficiency diseases due to lack of a vitamin adequate diet.

Part II is devoted to the Food Requirements Under Special Conditions. Here a discussion of the nutritional needs during Pregnancy, Lactation and Old Age will be found. The Feeding of Infants and Children is also adequately discussed.

The chapters devoted to Diet Therapy, Part III, are especially good. Excellent material is presented and evaluated in these chapters; and the one on Diabetes Mellitus is unusually informative.

A section devoted to Laboratory plans and Lessons; and an excellent Appendix complete this volume. It is readable, illustrated and well suited for a textbook or a reference book for nutritionist, dietitian, doctor or student.

ELIZABETH BURRUSS.

Manual of The Diseases of The Eye. For Students and General Practitioners. By CHARLES H. MAY, M. D., Consulting Ophthalmologist to Bellevue, Mt. Sinai and French Hospitals, New York; etc. Seventeenth Edition, Revised with the Assistance of CHARLES A. PERERA, M.D., Associate in Ophthalmology, College of Physicians and Surgeons, Medical Department of Columbia University, New York; etc. Baltimore, William Wood and Company. 1941. viii-519 pages. With 387 Illustrations including 32 Color Plates, with 93 Colored Figures. Cloth. Price $4.00.

The seventeenth edition of May's Diseases of the Eye is a very good volume. The author has continued his original plan of presenting a concisely written book on ophthalmology for the under-graduate student and general practitioner. There have been a few changes bringing the contents up to date. The chapter on ocular injuries and the appendix on ocular requirements for admission to the army, navy, marine and aviation services, are well worth a complete study by the general practitioner.

L. B. SHEPPARD, M. D.

Handbook of Communicable Diseases. By FRANK H. TOP, A.B., M.D., M.P.H., Director, Division of Communicable Diseases and Epidemiology, Herman Kiefer Hospital and Detroit Department of Health; Associate Professor of Preventive Medicine and Public Health, Wayne University, College of Medicine; etc. And Collaborators. St. Louis. The C. V. Mosby Company. 1941. 682 pages. With 73 text illustrations and 10 color plates. Cloth. Price $7.50.

Dr. Franklin Top is at present director of the division of communicable diseases and epidemiology at the Herman Kiefer Hospital and Detroit Department of Health. His collaborators in this volume are all members of the staff of either the Wayne University College of Medicine in Detroit or the Detroit Department of Health.

The book is intended as a handy reference on the subject. It is concise and succeeds in its aim to present only such information as is essential for practical diagnosis, treatment, and prevention. The approach is unique inasmuch as the diseases are classified according to the predominant portal of entry. In this regard it is interesting that even though Dr. Top feels that the gastrointestinal tract is probably the common portal of entry for the poliomyelitis virus, he still considers this sufficiently doubtful to classify poliomyelitis with those diseases where the nasopharynx is the entry portal.

One notes with much satisfaction the excellent and numerous pictures and especially the color plates of the contagious diseases, of which too few have previously been published. These better than any description will help persons unfamiliar with these diseases to visualize them. Appended is a compilation showing the incidence of the various diseases and their complications at the Herman Kiefer Hospital.

This book will be a useful addition to the libraries of men in public health and in practice who deal with the communicable diseases.

B. M. KAGAN, M. D.

Shock Treatment in Psychiatry. A Manual. By LUCIE JESSNER, M. D., Ph.D., Resident Psychiatrist, Baldpate, Georgetown, Mass.; Graduate Assistant in Psychiatry, Massachusetts General Hospital; etc. And V. GERARD RYAN, M.D., Associate Psychiatrist, Elmcrest Manor, Portland, Conn; Assistant in Psychiatry, Harvard Medical School. Introduction by Harry C. Solomon, M. D., Clinical Professor of Psychiatry, Harvard Medical School; Chief of Therapeutic Research, Boston Psychopathic Hospital. New York. Grune & Stratton, Inc. 1941. xv-149 pages. Cloth. Price $3.50.

With due regard to the limitations of our present knowledge of shock therapy, this timely volume should be well received by the medical profession. It deals briefly and succinctly with the use of insulin, metrazol and electro shock treatment in mental diseases. Each therapy is divided into its historical background, technique of treatment, modifications, complications, laboratory and clinical findings, and evaluation of improvement.

The neuropsychiatrist will find this book of great value in the actual technique of shock treatment. To the general practitioner it will be a clear, concise review of a fascinating subject. This book contains an excellent bibliography.

LOUIS KOLIPINSKI.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, $2.00. Single Copies, 25c.

VOL. 69. FEBRUARY, 1942. No. 2

Editorials

A Proposed Bill to Improve the Medical Practice Act

THE practice of medicine in Virginia is regulated and controlled by certain statutes known as the Medical Practice Act, and violations of the provisions of this Act are punishable as ordinary crimes by fine or imprisonment, or both. The result is that a person practicing without a license is proceeded against in a criminal court, is given the right of a trial by jury with the burden on the Commonwealth of proving guilt beyond any reasonable doubt, and of course relies on every possible technicality to obtain an acquittal or a reversal of the judgment by an appellate court. Unavoidable delays occur, and even where guilt is finally established, the accused has been able to continue his illegal practice for months or years while counsel have carried his case from the original warrant to a final decision in the Supreme Court of Appeals. Even then a reversal on technical grounds, as in a recent case from Staunton, would start the long proceeding all over again.

In many states the criminal prosecution of illegal practitioners has been largely supplanted by a simple proceeding in a court of equity in which the judge hears the evidence, and, if illegal practice is proved by a preponderance of the evidence, enters an order restraining the practitioner from further violation of the Act. Failure to comply with the order is then punishable as contempt of court. The right of appeal is of course preserved, but the whole procedure is simplified and freed of unnecessary technicalities. The courts in a large number of states grant restraining orders or injunctions against unlawful practice without express statutory authority, while in others such statutes have been held necessary. In Virginia it seems wise to expressly confer this power on the courts in order that their right to act may be unquestioned, and it is proposed to do this by presenting to the General Assembly of 1942 for passage a bill amending the Medical Practice Act by adding a new section, numbered 1623-a, authorizing the use of injunctions to prevent illegal practice.

The proposed bill confers upon the circuit and corporation courts the power to enjoin and restrain the practice of medicine in any of its branches in the State of Virginia without a valid certificate or license issued by the State Board of Medical Examiners and duly recorded. A suit for the purpose of obtaining such an injunction may be instituted by the State Board of Medical Examiners, by the Attorney for the Commonwealth, or by one or more duly licensed practitioners of medicine in any of its branches. No in-

junction may be granted until a hearing on the merits has been had, this making unnecessary the bond usually required when injunctions are granted prior to a hearing. Under this procedure the unlicensed practitioner is given the right to meet in open court and if possible to refute the charges preferred against him, but if found guilty he is promptly enjoined from further practice until a license is obtained. This procedure is in line with that followed in many of the most progressive states, and the enactment of the proposed bill into law will be very helpful in meeting the dangerous situation caused by the influx into Virginia of unlicensed practitioners who have been denied the right to practice in other states.

Be Helpful

IF each member of the Medical Society of Virginia into whose hands this issue of its official organ comes would tear out the above editorial and send it with a word of approbation to his representatives in the Virginia Senate and House of Delegates he would probably insure the easy passage of a bill which would instrument the present medical practice act and guarantee forever the effective elimination of the cults from our body politic.

The Effects of the War on Medicine in Great Britain

SIR WILSON JAMESON, chief medical officer of the British Ministry of Health, on a mission to this country, revealed in an address before the New York Academy of Medicine on November 3rd some rather astonishing things about the effects of the war on medicine in the British Isles. After confessing the failure of the Emergency Medical Hospital Service which had been created upon the expectation of casualties greatly in excess of those actually experienced, and admitting that before it had been abandoned serious dislocation of the whole hospital system as well as demoralization of the medical profession had occurred, he pointed out that at least one advantage had accrued—namely, the closer integration of the voluntary and public hospitals with definite assurance from the government that in the future the hospital system in Great Britain will be left to its present management although all hospitals will be brought under a uniform plan with government grants to those institutions not having the status of the public hospital.

His remarks as regards medical education indicated that although the war had had an unfavorable effect upon preclinical instruction it had in some respects improved the practical instruction of medical students. He denied that the length of the medical course had been changed although stating that senior students are now required to do junior interne work in order to expedite their preparation for practice. There has been no reduction in the number of students admitted to medicine. Among the interesting effects of the war Sir Wilson stated that the suicide rate has declined, that there has been no increase of alcoholism and that the psychoneuroses are almost a thing of the past—a serious development for the psychiatrists who now find themselves "bereft of practice". There was a bit of warning in his statement that in spite of pre-war opinion to the contrary Great Britain was now suffering from a serious deficiency of physicians and that some sort of redistribution of medical personnel was in the offing. The general practitioner is having a rough time of it, being responsible on an average for a population of 4,000.

The raids on London have apparently done tremendous damage to hospitals which will result in a post-war redistribution. Of 78 public hospitals in London County 72 have been hit in one way or another. Astonishingly enough, however, only 200 patients and 44 staff members have been killed. The nutrition of the British people is now receiving scientific study by the Medical Research Council aided by the Rockefeller Foundation. As is to be expected no satisfactory yard stick for measuring such deficiency has yet been discovered. Young adults and workers on defense jobs have been the chief sufferers and there has been a sharp rise in the tuberculosis rate among young female workers.

The expected epidemics have not occurred, barring a small outbreak of 12,000 cases of cerebro-spinal meningitis in 1940 and a few outbreaks of paratyphoid fever and trichinosis. Typhoid fever and influenza have not put in their appearance.

Sir Wilson concluded his address by some significant remarks which may have application in this country before this conflict has been brought to a satisfactory conclusion. He observed that among doctors in the service there is no talk of getting back to practice. "Nobody wants to get back to the old job." The old jobs are gone. They want to work in a different way. It was the opinion of this British authority that the English medical profession is getting socially minded and that these changing ideas are destined in the future to have a salutary effect in raising the level of practice in Great Britain.

We Know More

IT is heartening to all of us to realize that the medical profession enters the present conflict armed with new tools, new procedures and new knowledge that give promise of reducing casualties. Although the war confronts us with fresh and serious problems, such as the devastating effects of the thin-walled high explosive shell and the increased number of burns, improved methods in military surgery and medicine will more than offset them. Simply to list these procedures is encouraging. Surgery of the heart, of the brain and of the nerves has made tremendous advances since the last war. Immobilization of wounds is a procedure of proven value. The envelope treatment of burns gives promise of success. The widespread employment of plasma is receiving deserved recognition. Testosterone in the treatment of some of the psychic aftermaths of war and the vitamins are now accepted instruments of therapy. Typhus vaccine and a better understanding of the general public health problems of the mass collection of soldiers is a part of our armamentarium. It is even likely that the communicable diseases, especially the so-called diseases of childhood which played such havoc with our armed forces in the last war, may be controlled by a proper appreciation of susceptibility gained by means of adequate histories obtained at the time of enlistment.

Successful Doctors

WE have a sneaking suspicion that the life of a successful doctor is just as interesting to medical as to lay readers, and that is saying a great deal. There are few doctors who do not wish to improve themselves and there is no more wholesome way of doing this than by reading good biography.

The Doctors Mayo, written by Helen Clapesattle and published by the University of Minnesota Press, is not only an account of the lives of Drs. William and Charlie Mayo, and of their inimitable father, William Worrell Mayo, but also of the Mayo Clinic, an institution which is showing itself to be endowed with a vitality that will insure its continued survival despite the death of its founders.

Although many factors undoubtedly entered into the success of the Mayos the essential elements are probably not beyond the comprehension of the discerning analyst. In the first place it must be realized that the Mayos came upon the scene at a time in the development of surgery peculiarly favorable for its use on the grand scale. The discoveries of Pasteur and Lister and of early American pioneers, such as Halsted, Price and Murphy, revealed a field the Mayos were not slow in appropriating. They were also fortunate in beginning and continuing their venture in the wide and undeveloped country west of the Mississippi. They were wise in staking out their claims in Rochester rather than in one of the larger cities to which less judicious men might have been lured. They were without competitors in their community and they made the most of the fact.

In the next place the Mayos intuitively appreciated the importance of team work. They not only originated the idea of group practice but more than any of their later imitators they succeeded in making their idea work. The novelty of the plan, the successes which it achieved, made good copy and they were unconsciously better advertised to the American people than any similar group of doctors has ever been.

When to these factors was added the genius of Will Mayo for organization, of Charlie Mayo for making friends and of both for appropriating the best of what they found around them and of carrying it a step further in effectiveness, the success of the Mayo Clinic was assured and its success is not difficult to comprehend.

One other fact remains to be noted and that is that nothing succeeds like success.

Nine Lives

DISEASES OF WOMEN (Harry Sturgeon Crossen and Robert James Crossen, St. Louis, C. V. Mosby Company, 1941) will by no means be confined in its use to the gynecologist and obstetrician. The ninth edition of this book, already a favorite with many physicians, will be welcomed not only for its past worth, but for its inclusion of much new and valuable material. The same clear and systematic text and an increased wealth of illustration commend this edition. The development of our knowledge concerning the diseases of women spreads over many decades, and this book reflects the progress made in its consideration of such subjects as pelvic inflammation, tubal pregnancy, serologic diagnosis, histologic examinations for cancer, roentgenographic visualization of uterus and tubes, the endocrines, the vitamins and allergy. The authors wisely approach their subject from a physiologic point of view and lay much stress upon the new knowledge which has revealed some of the intricacies of the interrelations of hormones, endocrines, sympathetic and parasympathetic balance. The emphasis, wisely, has been shifted from gross structure to cellular pathology and physiologic dysfunction.

Local Societies

The Northampton County Medical Society

Met on January 12th at which time Dr. William Grossmann, Epidemiologist with the State Health Department, outlined plans for the Emergency Medical Care of civilians in case of disaster.

Dr. S. K. Ames, Chief of Emergency Medical Service in Cape Charles, and Dr. W. Y. Garrett, Chief of Emergency Medical Service in the remainder of Northampton County, spoke more specifically of plans being made in their respective territories, the same being well under way.

Dr. W. T. Green, Jr., was appointed as a Committee to distribute Defense literature to the offices of the physicians.

Dr. J. W. Jackson was appointed as Advisor from the Society to the Women's Auxiliary of the Northampton and Accomack County Medical Societies.

Election of officers resulted as follows: President, Dr. J. R. Hamilton, Nassawadox; vice-president, Dr. W. T. Green, Nassawadox; and secretary-treasurer, Dr. W. C. Henderson, Nassawadox.

W. C. HENDERSON, M.D., *Secretary.*

Warwick County Medical Society.

The 1942 officers of this Society, elected recently, are: President, Dr. H. W. Potter; vice-president, Dr. Paul Hogg; and secretary-treasurer, Dr. John F. Gayle. All are of Newport News.

Danville-Pittsylvania Academy of Medicine.

At the annual meeting of the Academy, the following were elected as the 1942 officers: President, Dr. Snowden C. Hall, Jr.; vice-presidents, Dr. Prentice Kinser, Jr., and Dr. E. W. Arnett, Jr.; and secretary-treasurer, Dr. Charles A. Easley, Jr. All are of Danville.

The Tazewell County Medical Society

Held its last meeting in North Tazewell on January 8. Dinner preceded the program. Dr. Linwood Farley of Richlands had charge of the program and showed a moving picture produced by Eastman Kodak Company on "The Diagnosis and Treatment of Infections of the Hand". This interesting and instructive picture was discussed by Dr. Norman Patterson of Richlands.

Dr. Rufus Brittain of Jewell Ridge is president and Dr. Mary Elizabeth Johnston of Tazewell secretary of this Society.

Lynchburg Academy of Medicine.

In the January MONTHLY, names of the new officers for the Academy were given, it being stated that the secretary-treasurer would be elected by the trustees later. Dr. C. E. Keefer resigned and Dr. James A. Wilkins of Lynchburg was elected to this office. Dr. John Hundley, Jr., is president.

News

The Tri-State Medical Association of the Carolinas and Virginia

Will have its annual meeting the latter part of February in Greenville, S. C., under the presidency of Dr. Addison G. Brenizer of Charlotte, N. C. Plans had not been completed at the time of our going to press but further information may be obtained from Dr. J. M. Northington, secretary, Charlotte, N. C.

Medical College of Virginia News.

Dr. E. W. McHenry of the University of Toronto and Mr. Jackson Davis of the General Education Board were recent college visitors.

Dr. George E. Snider, Dr. James Burke, and Dr. Gilman R. Tyler have received their commissions as captains in the United States Army. These three alumni served in the hospital division of the college and were called to the service last year. They are located at the Lawson General Hospital, Atlanta, Georgia.

The Phelps-Stokes Fund has made a grant of $100.00 for the Saint Philip School of Nursing Library.

The new wing of the Saint Philip Hall, made possible through a grant of $130,000 from the General Education Board, will be completed this month. This new addition will provide seventy-four new bedrooms, enlarged library and classroom facilities. The enrollment of this separate Negro unit of the institution has doubled in recent years.

The Southern Medical Association has accepted the invitation to hold its annual meeting this year in Richmond and will use college facilities to a considerable extent. The meeting is tentatively scheduled for November 9, 10, 11, and 12.

President W. T. Sanger and Dean Lee E. Sutton, Jr., will attend the annual meeting of the Council on Medical Education and Hospitals of the American Medical Association, and President Sanger will also attend the annual meeting of the Dental Council of the American Dental Association. Both meetings will be held in Chicago.

Dr. William B. Porter, professor of medicine, will be one of the speakers on the program of the New Orleans Graduate Medical Association, March 2. This program will be sponsored by Tulane University school of medicine.

Dr. H. Hudnall Ware, Jr., associate professor of obstetrics, will attend a meeting of the Tri-County Medical Association, Fairmont, W. Va., January 27, and speak on Ectopic Pregnancy. Dr. Ware will also attend the annual meeting of the Board of Directors of the Birth Control Federation of America in New York City, January 29-30.

The Medical College of Virginia will begin a four-quarter schedule about the first of July in order to accelerate medical training during the war emergency. This will permit students to graduate in three years. However, there will be no lowering of entrance requirements or of the present curriculum.

News from the University of Virginia.

Following the close of the current nine-months session the Medical School of the University of Virginia will change to a twelve-months basis; work will be conducted the year round for the duration of the national emergency. Continuous operation of the Medical School will reduce the period of medical training from four to three years. The session 1942-43 will open on June 29, and will comprise four quarters of eleven weeks each. No radical changes are contemplated in the current curriculum, except that electives will be discontinued and a substitute course will be immediately organized in Essentials of Military Medicine, comprising traumatic surgery, first aid, blood plasma banks, neuropsychiatry, preventive medicine and aviation medicine.

Dr. L. Nelson Bell,

Formerly of Tsingkiangpu, China, has located at Swannanoa, North Carolina. He has been appointed visiting surgeon at the Mission, St. Joseph's and the Biltmore Hospitals in Asheville.

American Congress on Obstetrics and Gynecology.

The Committee sponsoring the next Congress of this organization believe that, notwithstanding the war situation, it should be held as previously sched-

uled and are proceeding with their plans to have the gathering in St. Louis, April 6-10, an outstanding one. Inquiries as to the Congress may be addressed to the Central Office, 650 Rush Street, Chicago, Illinois.

Dr. H. W. Hollingsworth,

Formerly of southwestern Virginia, after a short time spent in Tennessee, has returned to Virignia and is now at Leona Mines.

Dr. John Evan Alexander,

Recently on the staff of the Gill Memorial Eye, Ear and Throat Hospital, Roanoke, has located in Evansville, Indiana, with offices in Hulman Building, and is engaged in the practice of his specialties.

Award For Study and Treatment of Rheumatic Fever.

An award of $1,000 to assist the outstanding work done by Irvington House, of Irvington-on-Hudson, N. Y., in the study and treatment of rheumatic fever, has been made by The Borden Company.

The Sanatorium, known as "The House of Mending Hearts," houses about one hundred young, underprivileged patients. Its splendid work in caring for patients with rheumatic heart disease has brought to Irvington House great distinction and inquiries have been received from as far as South America and Australia on the matter of setting up of convalescent homes for cardiac youngsters.

Specialized care and supervised living are provided for many months for underprivileged children afflicted with rheumatic heart disease, so that they may be able to assume their rightful roles as useful citizens.

American Board of Obstetrics and Gynecology.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted at Atlantic City, N. J., by the entire Board, from Wednesday, June 3, through Tuesday, June 9, 1942, prior to the opening of the annual meeting of the American Medical Association.

Application for admission to Group A, Part II, examinations must be on file in the Secretary's Office not later than March 1, 1942.

Candidates for *re-examination* in Part II must make written application to the Secretary's Office before April 15, 1942.

The Secretary will be glad to furnish forms upon request, together with information regarding Board requirements. Address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Penna.

Dr. Thomas E. Painter,

Recently of Radford, has located in Pulaski and is now chief physician for Mason and Hanger Construction Company at Dublin.

Dr. Albert G. Schnurman,

Recently with the Radford Ordnance Works, left that place last September and went to Boston where he studied under Dr. Paul White, and from there to the Mayo Clinic for several weeks, later attending the International Post-Graduate Assembly. He expected to locate in Roanoke for the practice of medicine but his plans were changed by the war, and he now expects to enter the U. S. Naval Reserve.

Dr. Fred J. Wampler,

Professor of Preventive Medicine, Medical College of Virginia and chairman of the Committee on Industrial Health of the State Society, was on the program of the Fourth Annual Congress on Industrial Health, held in Chicago, January 12 to 14, and was also appointed by Dr. Roshier W. Miller as delegate from the Medical Society of Virginia.

$150.00 Prize Offered.

Under the Miscellaneous Department in this issue of the MONTHLY appears a notice of the "Foundation Prize" to be awarded by the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, with rules governing the award. If interested, this may be found on page 104.

Mead's Medical Sports Review,

In its last issue, featured the reproduction in full color of some of the National Wildlife Federation stamps on the front cover. The magazine is attractive and interesting as it is comprised of pictures, news items, and other bits obtained from doctors who believe that physicians should play as hard as they work.

Married.

Dr. William Edwin Dickerson of Danville and Mrs. Cecil May Graeter of Richmond, January 3.

Dr. Angus Crawford Randolph, lieutenant, U. S. Army, of the class of '40, University of Virginia, and Miss Marjorie Armstrong McLernon of San Antonio, Texas, December 20. Lieut. Randolph has

just graduated from the School of Aviation Medicine at Randolph Field, and will be stationed at Kelly Field as flight examiner.

Dr. Philip Carey Whitehead and Dr. Betty Gordon Willis, both of the class of '41, University of Virginia, December 25. Dr. Whitehead is serving his internship at the Montreal General Hospital, Montreal, Canada, and his wife is serving at Gallinger Municipal Hospital, Washington, D. C.

Dr. Charles D. Schilling, now interning at the University of Virginia Hospital, and Miss Alice Thompson of Gretna, January 10.

Dr. James Tate Mason, class of '40, University of Virginia, and Miss Margaret Elizabeth Thomas of Bluefield, W. Va., January 10. Since completing his internship at Bellevue Hospital in New York City, Dr. Mason has been on active duty in the medical corps of the U. S. Navy.

Lt. Charles H. Dow, M. C.,

Formerly of Chilhowie, announces his transfer from Fort George G. Meade, Md., to School of Aviation Medicine, Randolph Field, Texas.

Dr. John F. Woodward, Jr.,

A senior surgeon in Manhattan Ear, Nose and Throat Hospital, New York City, was the guest speaker before the Norfolk County Medical Society on January 12, his subject being "Our Health—Yesterday and Today: A Study of Acute Otitis Media and Mastoiditis and Their Relation to Public Health".

Dr. June U. Gunter,

Recently at Jefferson Hospital, Roanoke, announces that he is now at Norfolk Naval Hospital, Portsmouth, Va.

Dr. Grant R. Elliott

Of Orange, now a major in the Medical Corps,, U. S. A., is at present taking a post-graduate course in Aviation Medicine and, upon completion of the course about April 1, expects to return to the Savannah Air Base.

New Member of State Hosptial Board.

Governor Price has appointed Dr. J. Shelton Horsley of Richmond as a member of the State Hospital Board to succeed Dr. R. Finley Gayle, also of Richmond. Dr. Gayle's term of office expired June 30, 1939, but he had been continuing to serve until his successor was appointed. Dr. Horsley's appointment will end June 30, 1943.

Dr. Snowden C. Hall, Jr.,

Danville, has been re-elected medical director of Hilltop Sanatorium in that city for the coming year.

Personnel Notes from State Health Department.

Dr. W. E. Roye, formerly health officer of the Alleghany-Botetourt Health District at Covington, Virginia, has been transferred to the Tuberculosis Out-Patient Service of the State Health Department's central office, Richmond.

Dr. Daniel Hope, Jr., formerly assistant health officer of the Brunswick-Greensville-Mecklenburg Health District, has been transferred as health officer to the Alleghany-Botetourt Health District.

Effective January 1, 1942, Dinwiddie County joined with Sussex-Prince George Counties as a health district under Dr. F. J. Clements, Health Officer.

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Obituaries

Dr. Robert Coalter Bryan,

Prominent in the city's social and civic activities and a well known surgeon, died at his home in Richmond on December 24, at the age of sixty-eight, after having been in bad health for several years. Completing his academic education, he studied at the University of Virginia, later going to the College of Physicians and Surgeons of New York

City, from which he graduated in 1899. Shortly thereafter he located in Richmond and was connected with the teaching staff of the former University College of Medicine and, after the merging of the medical schools, with the Medical College of Virginia. He was for sometime professor of genito-urinary surgery at the latter college until his retirement in 1932. He was one of the founders and former owners of Grace Hospital, this city. Dr. Bryan saw service abroad in the last World War, retiring with the rank of major in the Medical Corps. He was a member of numerous local and national medical organizations and a past president of the American Association of Genito-Urinary Surgeons. He also served as a member of the House of Delegates of the American Medical Association from the Medical Society of Virginia in 1919. His wife, two sons and two brothers survive him.

Dr. Harry L. Myers,

Prominent Norfolk specialist in diseases of the eye, ear, nose and throat, died January 5. He was a native of Waynesboro and seventy-two years of age. After his early education, Dr. Myers attended the University of Virginia and received his medical diploma there in 1889. Later he took postgraduate work in New York and abroad. Upon his return, he became assistant to Dr. Joseph A. White of Richmond. On leaving this city, he practiced for five years in Danville before locating in Norfolk where he had since made his home. He was a member of his local and State medical organizations and other societies in his specialty. His wife survives him.

Resolutions on Dr. Myers.

The Norfolk County Medical Society records with deep sorrow the death of one of its most beloved members, Dr. Harry L. Meyers.

A past president of the Society, for many years he has been a valuable member, a regular attendant at its meetings, and a staunch upholder of the principles and practices which have made it always a progressive, deliberative body of great value to its members and to the community which it strives to serve.

A perfect gentleman in all of his personal and professional contacts, he exemplified those characteristics which endeared him both to his patients and to his professional associates.

A graduate in medicine of the University of Virginia, he was one of the youngest men to pass the rigorous examinations of that institution and to receive its diploma. Beginning the practice of medicine at an early age, he extended his knowledge and experience by postgraduate work and later entered the special field that he practiced so successfully until the time of his death. A constant student and a careful worker, he soon gained recognition as one of the leading men in his specialty in this locality and in the State.

Like all men of real attainments, his modesty and self-effacement were predominant characteristics in his life and in the practice of his profession. Endowed with a good voice and considerable musical attainments, he found solace and recreation in the piano, which he played with delicacy of feeling and proficiency, mostly for his own enjoyment but on occasions for the benefit of his close friends.

Dr. Myers will be greatly missed by his friends, both in and out of the profession, but his gracious memory will remain with those who knew him well and who, in knowing him, felt the kindly influence of his friendship.

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Dr. William F. Williamson,

Richmond, died unexpectedly at his office on January 13. He was born in Alexandria sixty-two years ago and studied medicine at the former University College of Medicine, Richmond, from which he graduated in 1905. He saw service in the last World War and was retired with the rank of major. Two sisters survive him.

Dr. Virginius Dabney

Died at his home in Washington, D. C., January 18, at the age of sixty-three. He was a native of Charlottesville and graduated from the University of Virginia in 1902, later studying abroad. He had been chief of the staff of the Episcopal Eye, Ear and Throat Hospital in Washington for the past fourteen years. His wife and several children survive him.

Dr. Joseph Thompson Graham,

Draper, died November 29. He was forty-five years of age and a graduate in medicine from the Medical College of Virginia in 1923.

Dr. William Grady Smith,

Wendell, N. C., died December 11 at a Raleigh hospital. He received his diploma from the Medical College of Virginia in 1925, and was a member of his State and local medical organizations.

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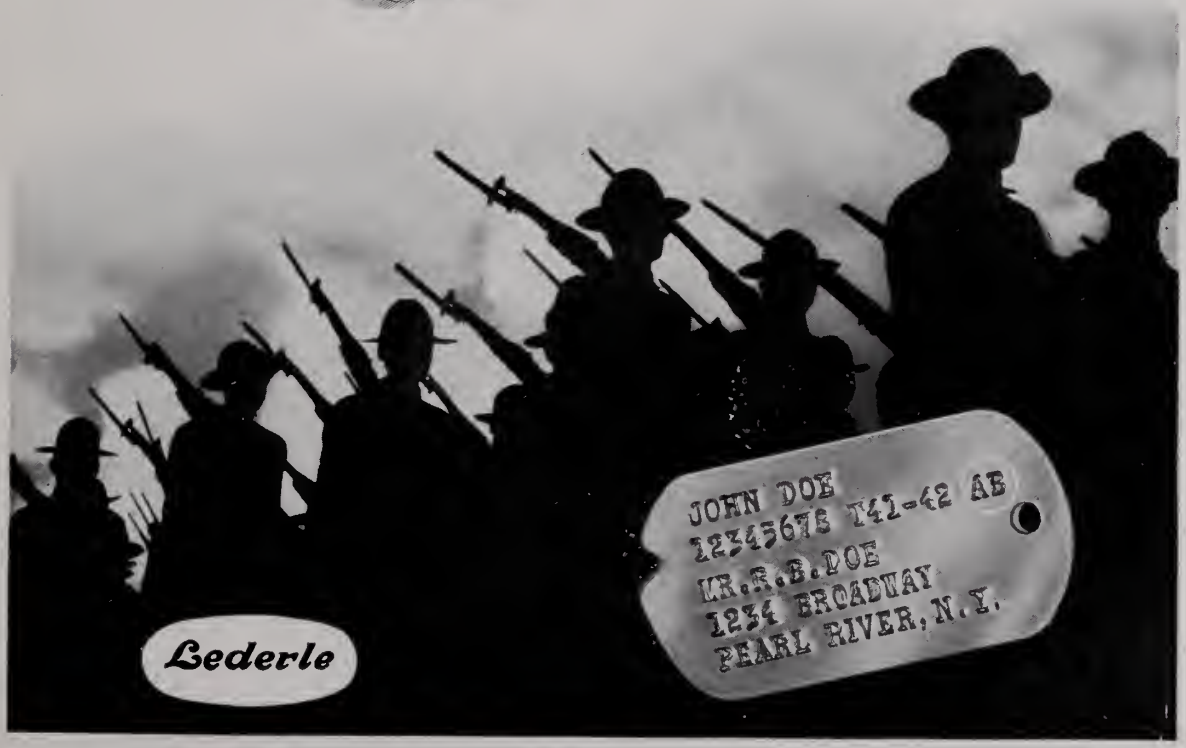

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VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

THE N.Y. ACADEMY OF MEDICINE
MAR 1 1942

VOL. 69. March, 1942 NO. 3.

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Annual Meeting—Medical Society of Virginia
Roanoke, October 5, 6 and 7, 1942

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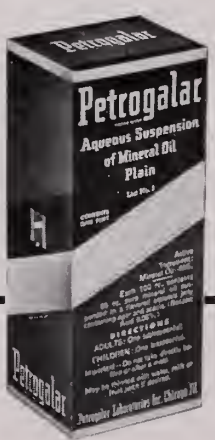

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RICHMOND, VA., MARCH, 1942.

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Guest Editorial

New Frames For Old

IT is notorious that on the plane of controversy irrelevancies prevail over facts and reason. True to precedent, while a large proportion of both laymen and physicians are united in the desire to extend and to improve medical care, the two parties are at odds about methods by which this common aim can be attained. Physicians pride themselves that their services are denied to no one who needs them without regard to remuneration. But as medical care has been transformed from a comparatively simple personal service to a highly complex procedure requiring technical facilities, provision of high quality care gratuitously or below cost is becoming more and more impracticable, if for no other reason, because manufacturers of the appurtenances required for the practice of medicine recognize no like altruistic code. When, however, laymen emphasize the great expense of medical care to the public, with the apparent implication that physicians are profiteering, and propose to solve the problem by a purely fiscal formula, the medical profession rightly resents the seeming aspersion. It is unfortunate that controversy should have begun on this plane because it obscures facts and limits experimentation.

Public medical care is with us and steadily growing, not a future contingency. Moreover it has been continuously moving out of offices and homes into hospitals, dispensaries and other institutions which can afford the requisite modern equipment and in which both facilities and personnel can be economically and efficiently coordinated. In these institutions private philanthropy or governmental agencies or both assume responsibility for capital expenses, maintenance and all adventitious costs of medical care; but seldom for remuneration of physicians. As this movement grows physicians can not continue to bear the burden as an avocation. To decentralize facilities and medical activities would detract from efficiency and economy. In this province of medicine participation of physicians has always been restricted and remuneration negligible. Competitive private practice, with fee for service payment and complete freedom of choice of physician, would be incompatible with proper coordination of the activities of men using common facilities. To insist on these principles can, therefore, only delay the proper recognition of the physicians' contributions and limit experiments to find more appropriate solutions for the problems of medical care.

There is room for pride in the rapid advances of medical science in this country; but the medical profession should view with anxiety the diminishing share of their own members in investigation and discovery. These pursuits require coordinated facilities, materials and personnel, continuous intellectual effort and stimulating contacts. These the present system of private practice does not provide. To see practicing physicians relegated to the position of distributors of medicine which is made by chemists and physiologists would be unhappy indeed.

As the orientation of health services changes from treatment to prevention of disease, a system of payment by fee for each service rendered becomes increasingly less appropriate; for medical care which is contingent upon illness can not be preventive. The inapplicability of the present system of practice to prophylactic measures must hasten the extension of public health into the province of medical care. Mental disease, tuberculosis, venereal disease, have been largely usurped. By the same categorical approach, other infectious diseases, nutritive disorders and industrial diseases may be removed from the domain of the physician as means for their prevention are discovered.

The medical profession should assume the leadership in finding frames of action more consistent with the demands of science and the industrial era; not insist upon retention of a system through which they are gradually being robbed of their birthright, the making of medicine and the preservation of health.

JOHN P. PETERS, M. D.,
New Haven, Connecticut.

CAN MENTAL HYGIENE PREVENT NEUROSIS?*

MERRILL MOORE, M.D.,
Associate in Psychiatry, Harvard Medical School;
Assistant Visiting Psychiatrist, Boston City Hospital,
and
Medical Director of the Washingtonian Hospital,
Boston, Massachusetts.

Ladies and Gentlemen: It is a pleasure and a privilege to address you on this subject, which is of great interest to me. The problems about which I shall speak really concern every state in the Union, but it is appropriate that first we should consider them here in the Old Dominion.

But before attempting to answer the question, "Can Mental Hygiene Prevent Neurosis?" we may ask ourselves, Why are we here today? Why is there a Mental Hygiene Society, and what is its function in this or any other Commonwealth? The answer is really very simple. We are here because we hope we may be able to prevent unnecessary mental suffering through educational and preventive measures. That motive is as old as religion and it came first into existence when man began to recognize himself as a person with human values.

How can we achieve this common aim? Will it be by individual and group effort, by study and the use of scientific methods, or will it be through reflective thinking, sacrifice and prayer that we may reach the stage where needless mental suffering will be eliminated?

Now that we are facing one of the greatest crises the world has ever known, an uprising of force that is regressive and destructive, the problems of mental hygiene become more prominent in community and national life than ever before. This great Commonwealth, the first to demonstrate the way of life that has produced men of superior civic virtue, has never neglected the mentally ill. If Jefferson were alive today he would probably be in this hall participating with those of you who realize, as he did, the importance of using the intellect to control rather than supplant the emotions. He well understood the importance of using energy constructively and consciously, rather than blindly, to destroy the satisfactions of democracy.

The challenge and inheritance from men such as Washington, Jefferson and Patrick Henry remind us of the obligation which freedom of spirit imposes. Their challenge stimulates us anew to study our own problems now, and do what we can with the resources we have.

In considering specifically the problems of this Commonwealth which mental hygiene might help solve, and the methods by which such a solution might be made effective, we can say that these problems, in their larger implications, are essentially the same here as in any state. Modern changes in living, in transportation and communication, the newspaper and the radio, are bringing us all more closely together, and are educating us and welding us into one American family, all of whose members are mutually interdependent, each affecting the other. Everyone today has the same need to be happy, useful and secure, whether he lives in the hills of Alaska or in the Florida Everglades. We are learning more clearly every day that essentially we are all basically very much the same in our internal psychological organization. The human spirit is truly universal and the drives, the motives and the needs of men and women everywhere are essentially identical. Poets have always known this and philosophers have been aware of it and it is not news to theologians, but it has only now been taken into account scientifically by medicine since the rise of psychiatry.

This central idea that modern psychology is corroborating is of great significance when we plan our community life, our individual life programs and even when we build our mental hospitals. It is simply a new paraphrase of the Golden Rule. There is really very little difference between mental hygiene, intelligently understood and applied, and the Sermon on the Mount. Goethe was a good mental hygienist for his day and even the ancient poet Horace had ideas about peace and contentment that would merit modern application. I hope some of us may live to see them more widely applied.

Individually, man is small, frail and short-lived. He needs education, training and guidance to utilize

*An oration presented by invitation before the Mental Hygiene Society of Virginia in Richmond, October 29, 1941.

all his personal resources. Through the repository of the state, these needs can be satisfied more adequately than by any other method. Our cities, our counties, even our nation, depend on that internal unit which is the basis of democracy, namely: the intelligent individual *en masse* that gives stability to the machinery of our civilization. That is why a state program for mental hygiene is so important and that is why there is no more important division in any state government than the one which administers the program of mental health.

Even normal people need to be taught, and have much to learn from those whose personal limitations cause them to fail to live effectively. As Kipling said: "But the things you will learn from the Yellow an' Brown, They'll help you a lot with the White."

There was a time when the distinction between "normal" and "abnormal" was believed to be as clear as the difference between black and white. That day has passed. One hundred years ago there were sane people, and the insane. Now scholarly introspection has taught us that there are fragments of sanity in the most insane and, conversely, fragments of insanity in the most sane. The important need of today is to maintain a mental balance that will permit the utilization of the good qualities of both types in ways that are satisfactory to the individual and useful to others. Thus, great progress has been made in the construction and administration of our mental hospitals. It can be said without suggestion of exaggeration that nowhere in the world today are human beings treated with more thoughtfulness and consideration than in our American hospitals for the mentally ill, and those of you who live in Virginia can be proud to remember that it was in this state that the first mental hospital in America was built, at Williamsburg in 1773, The Eastern or Williamsburg Asylum, resulting from an act passed in 1768, the first in a hemisphere.

But there is one distressing thought that occurs to all people whenever they see a mentally ill person. It is this question: *What might have been done to prevent this illness? How might this suffering have been avoided?* We do not exactly know the answer, but that is the same question the psychiatrist always asks himself as he works with adult patients. The insane person is in the end-stage, and that may be the result of previous mismanagement, perhaps a long time ago. I often think in my daily work as I struggle with the problems of an adult neurotic, *why in the world was this person ever allowed to develop such an extreme degree of neurosis? Why wasn't something done about it twenty years ago?* Surely, when this man was in college, or when this woman was in high school, or in the home or school before that, something could have been done then to prevent so much future personal misery.

The psychoneurosis, so-called, represents a condition somewhere between normality and a psychosis, or insanity, so-called, though we do not know whether there is a real or only an apparent similarity between the two.

There is still a great deal we do not know about neuroses. For example, we still do not know with certainty whether they are organic or functional or a combination of both. We need to learn *much* more about their physical basis. We can describe how they appear and we can observe in individual patients the situations and events which seem to contribute to the development of a neurosis. We find that there are enough similarities in the histories of psychoneurotic patients to justify our assumption that their background helped to produce or precipitate their symptoms. The types of difficulties they experience fall into several quite distinct groups. I should like to speak briefly to you about these groups and describe to you persons who demonstrate each type. You have known people like them yourselves, I am sure. Different kinds of neurosis can be mixed in one individual, and people may suffer varying degrees of neurosis just as one man may have a mild head cold while another may have pneumonia when infected by the same germ.

The first type of neurosis is called "anxiety" on account of its most obvious symptom. In this state, a person may worry unduly about simple affairs to an extent that colors all his behavior. He may worry about things that have never happened or that could not happen. The origins of anxiety may be many but their roots usually go back to childhood and usually can be brought to the level of conscious understanding by psychiatric treatment.

Then there is hysteria. Hysterical people do not always simply cry or lose control of their emotions or shriek at the sight of a mouse as common usage of the word might lead one to suppose. The hys-

terical person, in certain situations, may even lose one or more of his faculties without apparent physical reason, or he may develop symptoms by the mechanism of conversion of his nervous energy. Some of the miraculous cures may have been such cases. A person with an hysterical paralysis, for example, may throw away his crutches and walk without them once he is more thoroughly convinced by suggestion that he can walk than that he is unable to do so. Persuasion or emotional reeducation may enable him to walk again when physical methods of treatment have failed. Many cases of industrial injury, believed to be malingerers, are actually cases of hysteria. Hysteria can also be described as a temporary splitting or dissociation of the personality under tension or conflict, or the disease that takes the form the patient thinks it should, or emotion gone off the track, or childish behavior in an adult.

Then there is hypochondriasis. We all have acquaintances or relatives who are continuously complaining of one ailment or another for which a physician can find no physical cause. Hypochondriacs are often the object of ridicule and are sometimes not taken seriously even by their family doctors. Their symptoms may be regarded as amusing or irritating by their family, or eccentric by their friends. However, they do suffer. First, they suffer from their fancied illness, and, secondly, from their partial realization that the condition of which they complain is not their actual ailment, or their entire difficulty.

A somewhat similar form of neurosis is called neurasthenia. This differs from hypochondriasis in that the patient suffers from weakness to such a marked degree that he can not carry out any activity. He may even be too weak to think.

Another type of neurosis is the compulsive tension state. Shakespeare gives us a good picture of a compulsion neurosis in Lady Macbeth. This was demonstrated when she continuously washed her hands in the hope of thus erasing her guilt. Frequent hand washing or general over-fastidiousness is often a symptom of subconscious feelings. I once knew a lady who always held a piece of paper over a doorknob when opening a door so as not to be contaminated by germs that might be on it. She was not cured of this compulsion until she was convinced that it was an abnormal form of behavior built up by unknown or unrecognized attitudes based on experiences in her past life. In the course of her treatment she discovered the roots of her compulsion and gave it up.

There are other types of compulsion that have nothing to do with cleanliness. Certain people sometimes go back and test a door three or four times after locking it, "just to be sure" even though they discovered the first time that it had actually been locked. They must be very uncertain of something but they may not realize it. Children are apt to go through a compulsive stage which they show by touching every railing or fence post they pass, or by trying not to step on the cracks in the sidewalk as they walk along. This is not abnormal in children, but when adults carry such patterns of ritualistic behavior to extremes, they can interfere seriously with more important affairs.

If mental hygiene develops and if it is successful in preventing mental illness, this will probably come about by using the information gained from the study and treatment of mentally ill persons. We may learn from these histories what not to do and possibly what should be done in caring for the growing child in his home and early school days. Everything we learn from the observation of the mentally ill in hospitals and from the treatment of neuroses in private practice shows us that more attention should be given early to the growing mind of the child by parents and teachers rather than later care *after* obvious mental disorders have developed.

If we take this view, we can look back and see many points along the line where much might be done to prevent the development of neurotic personalities with their extreme and unnecessary psychic suffering. It is this suffering and the attendant frustration that leads to fatigue and breakdowns, to physical and mental illness.

I would like to mention to you a few specific matters that need more attention in a concrete program of mental hygiene. Mental hygiene needs to be outlined in forms which its exponents can use more practically. Each of the following points can bear emphasis and can be applied in daily life.

If one is justified in judging from the histories of neurotic patients great caution is needed if one is to prevent neurosis in children. The obstetrician is very important to both the mother and the infant. A baby is completely at the mercy of the neuroses of his parents and anyone else in contact with him. Therefore, it is particularly important that both his

parents be as placid and as constructive as possible during the early days of his infancy. The obstetrician can contribute significantly to this by reassurance, but it may also be said that the obstetrician has his hands full taking care of the mother physically and that he should not concern himself with her mental ups and downs. He, nevertheless, is in better position than anyone else to recognize whatever emotional problems the mother may have, and can consider referring her to a psychiatrist if he feels the problem is more than he wishes to handle.

I have listened for hours to the complaints of neurotic women about their reproductive functions, and from this I am led to believe that physicians should give more reassuring psychotherapy to pregnant women as an essential part of prenatal care because of their fears and their extreme susceptibility to suggestion that is often seen during pregnancy. I believe that the mental state of the mother during pregnancy indirectly affects the child's attitudes even though not genetically. The old wives' tales, quaint though they are, mean something. A frightened neurotic girl may tell you that she has always been afraid of snakes because her mother was frightened by a garter snake while walking in the garden three days before the patient was born. This girl has been conditioned to believe that she is inevitably marked. What actually happened was that a choice story in the family repertoire was the one about the awful snake that scared Mama. And Mama told the story so often that the patient grew up to believe it as a fact. Even more important is the experience that from earliest childhood this patient saw her mother react with fear at the idea of a snake and, therefore, she assumed that this was a suitable female reaction. Analogous stories and beliefs and episodes in the family saga are often even more far reaching in their effect on a child's personality and attitudes. These things can build up pictures or images in the child's mind to which he tends to react later on, with fear. It is a kind of unhealthy reflex conditioning that occurs in the nursery. We often encounter it in treating adult hysterical patients. We need to know more about the fears of children. Of course there are many people who take to parenthood naturally, and fortunately there are many strong women who have no more need of reassurance than a mother cat about to have kittens. (But even a mother cat, to be sure, does need *some* reassurance).

Many people have wondered how much the so-called "birth trauma" or the unpleasant physical sensations of being born affect the child's future outlook on life. This is a point about which we obviously can never have first-hand information. I, for one, choose to discount it since all of us were once born and by approximately the same process. Of course, if the "normal" man of the psychiatrists were ever discovered he would probably turn out to be the ultimate in abnormality, for no one is without his own mental quirks. However, the majority of people do not have severe neuroses.

The next important step in taking care of a child is to provide him with a good pediatrician. The pediatrician's primary importance in the child's life is to assure for him as good physical health as possible. As I have said before, we do not yet know, what, if any, are the physical factors in neuroses, but we do know that physical illness is a drain on the resources on the whole personality. Illness leaves the personality handicapped to cope with whatever emotional problems may arise. Here, again, the pediatrician, like all other physicians, may find it necessary to use psychotherapy in his treatment of the child and the parent. Many parents need to be reassured about their children because the parents themselves are already suffering from an anxiety neurosis. If the parents have good outside help they are better equipped to avoid damaging the child by their own neurotic behavior.

Children seem to get their neuroses from their parents. A neurosis is obviously not an infectious disease, but it is certainly communicable from adults to a child. Every parent and teacher and every physician in America should read one book which emphasizes this basic idea of mental hygiene. It is "The Inner World of Childhood" by Frances G. Wickes. The author's essential thesis is that children understand how the parents feel without being told. In other words, children read and understand the feelings of older people around them by intuition, even at a very early age. The truly effective parent is the one who is able to take a long range view of his child's development as an individual.

Parents often ask me what they should read to their children. I believe that is is a bad idea in general to volunteer to tell children horror stories, not because of the manifest content of the story

itself but on account of the latent aggression and anxiety which the child may sense in the parent or in the home situation. A peaceful fundamentally friendly parent can usually read the goriest classics of children's literature to the child without any disturbance; but latent fears are sometimes stirred up by these stories. In reading to children or giving them books to read to themselves it is important to offer a balanced diet. Some children prefer fantasy and fiction while others prefer fact, but every child should be offered some of each.

It is probably a bad idea to tell children stories which teach them to fear unknown, yet harmless things, as so many parents do. When parents tell children frightening tales, as some parents, or nurses do, they mistake the rapt attention children give almost anything, for a personal tribute. They fail to see the little eyes grow big and round as the child listens, fascinated by the psychotic or the sadistic in the fairy tale, or the thriller, and do not see their little brains getting ready to write nightmares in their sleep. And this applies to a few popular radio programs I could mention. Of course, some children are unstable, but why stir them up? On the whole, I think the Gene Autry programs are the soundest, safest, and about the most constructive and best for children on the air. I do not think *The Shadow,* for example, is good for them.

We should ask ourselves this quesion: Why should we (through literature or radio) give our children, or anybody else, a picture of a crazy, distorted world of malevolent witches, destructive goblins and perverted elves and animals that dress up like humans and talk or act aggressively? I grant that normal stable children may be able to take it, may even enjoy it, but I must mention the fact that among children in need of mental hygiene casualties do occur. I recall one young patient whose most horrible memory (and still horrible to him) was the story of a table that got up and walked.

The child's inability to comprehend such a confusion of the animate and inanimate produces frustration, fatigue and a sense of horror in its mind. If parents were made aware of the effect that their own emotions produce in the mind of the child and the result which may be exacted in terms of repression and frustration in later years, they would make more effort to avoid using fear and encouraging anxiety in their children. I do not refer here to some of the better known classics of children's literature that are established by long usage. I think these do much good and little harm. It is the way the children see their parents behave at home that is important. I don't think it is the story that does it. It is the child sensing the unconscious attitude of the parent. And this idea can be applied as well to punishment as to rewards. Christian Scientists are probably correct in some of their views about unpleasant things, in a certain sense. They avoid repeating and dwelling on unpleasant themes as they would avoid any form of destructive mental activity. However, the opposite extreme of repression is fraught with equal danger. Parents should not over stimulate the child's sexual interests by calling attention to it more than the child wants.

In regard to the sex education of children (another topic that deserves a monograph), it is probably the Golden Mean, the way of reasonableness and common sense that is best. There are no magic formulas. As Solomon said: "There is no earthly way by sage advice to save the fool from his folly."

The next important event in the child's life is the beginning of school. Unfortunately, the ideal school does not exist any more than the ideal world exists, though many excellent educational programs have been developed which give due consideration to mental hygiene needs. If I had to generalize, I should say that one of the school's greatest potential defects is the teacher who is teaching because she must and not because it is the career she chose. But a teacher who really has a child's interest at heart can accomplish a great deal quite unaided. It would do no harm and might do some good, I believe, if more school teachers understood and used the individual psychology of Alfred Adler. In my opinion, Adler's ideas can easily be adapted to the needs of teachers and parents. Adler's writings, I know by experience, help some parents and teachers a great deal in their efforts to understand the problems with which they have to deal. But there are many children whose problems are so severe that it is impossible for any school to cope with them without psychiatric help. For these children, the habit clinic is of great value. In a community where there are child guidance centers the school can serve as a connecting link between the child's home and the guidance center. Parents who are accustomed to the neurosis of their children often

fail to recognize that the child has any unusual problem or needs any assistance. This is especially true when there are no other children in the family. Sometimes, in a one-child family, if the child fails to make progress or progresses in the wrong direction, it is not recognized. Sometimes normal progress is greeted with amazement as a rare phenomenon. In either case, this is apt to make the child's life outside of the home extremely difficult. A succession of children provides the parent with approximate standards for comparison, but one does forget just what little Willie did when he was seven and Johnnie and Willie and Susie are not really a big enough group to serve as examples. The teacher who is familiar with many children on the same age level knows what can reasonably be expected of a child at a given age and what are the normal variations within these limits.

In the absence of child guidance centers, groups of parents or parent-teacher associations can often serve in part the same function, although these agencies can never be particularly helpful to the child who actually needs a doctor. Slight deviations from standard behavior can often be corrected if steps are taken promptly. Even the parent of the normal child should take a hand in planning the child's daily life. If the parent has matured satisfactorily, he should be able to judge whether there is a reasonable balance of work, play and rest. This balance is rarely the same for any two children, although children tend to fall into groups with extraverted and introverted interests, as athletes or students, or any one of a number of classes. These categories do not always follow family patterns. I certainly do not need to tell anyone that there are often tremendous differences even among brothers and sisters. In general a well-planned program which provides acceptable and appropriate occupation for all the children in a family tends to reduce friction. And we should remember that unless the child has adequate home supervision poor habits of studying often hamper even a good school. With all the good there is in the radio, it should never be played during study hours as this produces a division of interest.

Jazz music is injurious just to *listen* to; it calls for *motion*. I have found several students failing in their studies because they were trying to *study and listen* to *Bing Crosby* or *Bob Hope* or *Information Please* at the same time. It can't be done. Do one or the other. Bing or Bob will always beat the book in the conflict in the student's mind, which, by the way, is natural, and to be expected. To do one thing subconsciously and another consciously is too fatiguing.

The child who navigates safely through childhood may encounter difficulties when he approaches adolescence. It is well for a parent to recognize this possibility and to be equipped in advance to deal with problems if they arise. The same general facilities should be available in the case of adolescent problems as were serviceable to the young child. Child guidance centers and similar social agencies can be very helpful and can adapt themselves very successfully to different age levels. It is important during adolescence to give the boy or girl legitimate outlets for growing energy without over-taxing strength.*

After adolescence, the next step in an individual's emotional life is concerned with marriage preceded by the stage in which boy friends or girl friends are important. Several colleges, Vassar, for example, have now included excellent courses on marriage in the curriculum. This seems an excellent idea since previously the little formal preparation for marriage that was offered was usually just a sop to those girls who were disinterested in or incapable of higher education in a more academic form. Brides' schools formerly were concerned largely with recipes and housekeeping which, although important, are certainly no more important than the emotional understanding and acceptance of the obligations of marriage. A less house-wifely approach to the problem of marriage also offers the future husband an opportunity to learn to participate in the phases of marriage for which husbands have heretofore had no special training. The tired business man and all the other tired men might learn to be less tired if they were better able to cope with the home situation and, therefore, felt less need to use work as an escape from home.

It is not possible to apply the science of genetics to courtship but young women should be taught at least the names of the qualities they should look for in a mate. Too many women over-value marriage

*The problem of petting or necking deserves an encyclopedia all to itself and cannot be dealt with briefly here. If any member of this audience ever finds the proper answer to that question, I would appreciate it if he would write and let me know.

and are ready to leap into it at the drop of a hat so long as their partner wears trousers, irrespective of his limitations. An example of this is the woman who marries an alcoholic with full knowledge of his excessive drinking habits. She may deserve some part of the results of such a marriage, but her children do not deserve the sort of father she gives them.

If, after such preparation for living, a person still finds himself tending to retreat into neurosis when faced with new problems, several possibilities present themselves. The first and most obvious, of course, is that he may see a psychiatrist, if one is available in the community. In some cities clinics for group psychotherapy have been established. In these, a doctor gathers into a sort of class a number of patients who have come to him with psychological problems. They may then pool what understanding and insight they have gained by treatment and experience for their mutual benefit. This method has obvious disadvantages but its low cost makes it available when no other form of mental help can be obtained. Without proper guidance, however, this sort of clinic could easily degenerate into an outlet for exhibitionists.

At the beginning of middle age, or the menopause, new problems may appear. Many people invest all sexual manifestations with the horror and guilt they feel over sex, but this period is not actually half so terrifying as a previous generation was led to believe by patent medicine advertisements. Besides unmasking many of the old bugaboos associated with middle age, modern science has also discovered new uses for certain glandular extracts which tend to decrease the physical symptoms of the menopause. If a person has reached a sound psychological footing before middle-age, he or she need not fear its onset. If he has not been able to adjust himself by that time, then one can suggest the resources of psychotherapy. Various kinds of treatment and well-planned programs will tend to reduce anxiety and other neurotic symptoms at any age.

If after all this the individual has still managed to maintain the neurosis, there is one solution fate may possibly afford him, that is the hope that he may sink gracefully into his old age still enjoying the neurosis as much as its secondary gain will permit. And sometimes this is considerable. One may as well realize that if the neurotic has held on to it so tenaciously for all these years he probably liked it better than he would like anything else.

If as mental hygienists we are still looking for jobs to do in the future, the most important subject for consideration is aggression, aggression as a force in individual human beings and in groups of people. The task of the psychiatric investigation in the future is clear. We should undertake to study examples and real cases of aggressiveness to show how it operates for destruction and how it can be turned into constructive paths. Think of the difference in world history if Hitler, for example, had come under the benevolent influence of any good European psychiatrist when he was a frustrated artist in Munich one short generation ago! Desperate men adopt desperate measures whether they be artists or politicians, alcoholic or suicidal cases. The alcoholic is a sick man, and the suicidal person is also sick, emotionally sick. We should study them more, in all ways, and try to treat them. The importance of studying aggression, personal and social, cannot be over-emphasized, especially for teachers and ministers and all who work with groups. If parents, teachers, ministers and doctors understand and work on this, the tide can be turned into the right channels where it rises. The idea of aggression may then be applied to groups and nations, showing how it leads to rivalry and wars. Possibly even lawyers and politicians may come to understand it. Properly handled, aggression might mean the salvation of the world; that is what new-born Christianity and fledgling Civilization have always aimed at. We will never have a better world than the people who live in it.

Much of what I have discussed is well known to you as members of the Mental Hygiene Society of Virginia. So we may ask ourselves again what this has to do with the development of a mental hygiene program? The answer is not obscure. The answer is: If the influence of early life on the later ultimate personality is apparent, then it follows that the efforts of the mental hygienist should be directed towards preventive work. Psychiatry has been concerned too long merely with diagnosis, description and custodial functions. As a science, psychiatry has passed its adolescent stage and must now apply the knowledge that has been acquired at such great cost. The child as an individual must come into his own.

Parents should not over-excite children. Parents should remember that children are not their playthings to be poked at and tossed about. Children are assets; raising them is serious business. Parents should give their children a sense of security in the child's own small world. All along the way the parent should guide the child and try not to let him go off the track of normal development. For example: it is important for a boy to keep abreast of his group and be able to do what his friends can do. Every boy should know how to run and throw a ball and play with his playmates. If a young boy has trouble throwing a ball, then have someone carefully teach him. If this cannot be done in the family, have it done from outside. Go to the local high school and get a boy from the baseball team to come one afternoon a week until the child gets the hang of it. Don't trust a school or camp entirely to handle his problems. Check up on them. Take the trouble to see to it that the child holds his own in his own world. If not, he may become atypical, slink off to the side lines, become critical or destructive and develop inferiority feelings or defeatist attitudes. The child must be recognized not only as the future soldier or the future mother of soldiers but as the ultimate unit in our democratic civilization.

In closing may I voice a few political sentiments about the war, its effect on us, and our efforts for necessary defenses? Because war may be considered as a kind of mass neurosis resulting from the unleashed aggression of social groups and because we hope that some day international mental hygiene may play a part in preventing war, as Woodrow Wilson once dreamed and Roosevelt and Churchill are now planning. Few of us can realize the dire significance of what is happening in the world today because it is so cleverly veiled and because attempts are being made by propagandists to sugarcoat it and because it is occurring secretly in insidious as well as in open forms. But it is bitter and poisonous medicine; I refer to the festering and degenerative spread of Nazi ideas (for we cannot call them ideals) and Nazi power through destructive force. If ever an Antichrist were let loose upon the world, one is loose upon it now, symbolized and personified by a protagonist, Hitler, who has never done anything, had an idea, or said a word that would not do credit to any paranoiac committed to our state hospital. Compare the book of Revelations with the morning paper and see how closely Hitlerian tactics resemble those of Satan. What has already happened is appalling, but what could happen yet is inconceivably more appalling, were it not for the fact that as a nation we are now awakening and we are beginning to see these dangers and prepare to meet them in concrete ways. We have that to be thankful for even though there are a few misguided and misguiding men whose weaknesses have led them into appeasing and submissive attitudes. These men do not appreciate the indignity of their own isolated position nor do they deserve the honorable adversary of our great President, against whom they have set themselves up. And that applies to all others in this country who are working consciously or unconsciously, directly or indirectly, like maggots on the surface, or like termites under cover to aid the Axis powers in their efforts to bring about the collapse of our civilization.

There is no task in the world more important for us at the present time than this: that we, as intelligent persons, do everything we possibly can, give all in our power, to make this present crisis clear, to understand what we are up against and to help others who do not understand to understand it. What is happening in Europe and by contagion in the world, is *as if* in this country we were to ask the patients on our back wards in insane asylums to run our country. That is what the gangster and thug leaders of Nazi Germany amount to—only they do not have the morality of decent thugs. Every psychiatrist knows that deep in every man is a strong primitive destructive part of him. Philosophers have called it evil and theologians have called it the devil that is in every man. All our civilization has ever done is to build up means of controlling this brute and using his energy constructively for personal and social welfare. That, as psychiatrists know, is all civilization is. Hitler and his hordes are attempting to release this brute in everyone on a large scale, and they have succeeded in their own country and to some extent in the countries they occupy. If this continues, civilization as we know it and as our ancestors have built it up goes by the board and we and our children go too—towards economic or political slavery and extinction. This cancer, this forest fire, this plague must be stopped now. That is the most, the

only really important need in the world today. It must be stopped at all costs, as Churchill has said, by sweat, and tears and blood. Money and taxes and personal effort on our part will be the first means of bringing this about, plus every other strength and resource we can muster.

Organizations to promote mental hygiene bring together those of us who have psychological insight and psychiatric interests, those of us who hope to help some day achieve a world of peace, dignity and security, a world of fairness, honesty and kindness. At the present time, if ever this is to be achieved, we can do nothing more important than bend all our energy towards bringing about national unity and active support of our government in its Victory Program. I say this now because this may be the last year, for some time, that we have the leisure and energy to spare for a meeting like this.

And one final thought to take home and act upon. I have just traveled here from Boston. On every train, in every station were crowds of men in the uniform of our armed forces, preparing to defend us. These men are working hard. When they have liberty or leave they need recreation to maintain their mental health. I spoke to one soldier and asked him what about it. He said: "We get awfully tired of the barracks. We hitch-hike into town, but all there is there for us is loafing around the beer joints."—There has been some talk about morale. Here is a definite problem, the problem of seeing that soldiers and sailors get decent recreation, and it is a civilian problem, where much can be done and it should be done. Most of these men are far from home where they do not have friends. We should do more, not only to support the USO which is doing all it can, slowly, but we should also personally arrange once a week to invite men in service to private homes or to see to it that some form of wholesome group entertainment is provided. This is absolutely necessary to show men in uniform we do appreciate them as Americans, many of whom have given up good paying jobs to prepare to defend us. It is a little thing but it is also a big thing and can do more than words, or theories, to keep army and civilian morale where it belongs.

This morning as I passed through Washington on the train, in the bright sunlight, in the peaceful autumn I could see the pillars of the Lincoln Memorial gleaming. They spoke to me of freedom and unity. I saw the stone pencil of The Washington Monument pointing aspiration and uprightness. Across the Potomac the front of beloved Lee's house beckoned from Arlington in the morning sun—its message was honor and chivalry and courage. Then the train swept by a new temple, the most recent, with a classic dome and shining columns. These bespoke the personality, the individuality, the integrity of Thomas Jefferson. All was peaceful, quiet and beautiful in the autumn morning. Then I thought of Poland, Holland, Belgium, France and that degraded list of nations in whose capitals and before whose monuments I have seen the same beauty and have felt the same inspiration, in the past.

I could only feel one hope, utter one prayer, that these altars of our country will always stand as they do now and that behind them to defend them (as it is now necessary) a united people and its government will stand forever.

Members of the Mental Hygiene Society of Virginia, I beg you to consider these things. It depends on us, and on men of good will everywhere.

GASTRIC CANCER*

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The early diagnosis and prompt treatment of gastric cancer furnish the only hope for lowering the steadily increasing mortality rate in this disease. Cancer of the stomach is now one of the most frequent causes of death, and each year more than 55,000 persons in the United States alone die from this condition. There are even more deaths from cancer of the stomach than of any other single organ in the body. Is it any wonder then that gastric cancer demands our most earnest consideration?

So far as we know from our observation of other parts of the body, cancer never springs directly from normal tissue, and if this is true elsewhere we may

From the Surgical Department of St. Elizabeth's Hospital, Richmond, Va.

*Read before the annual meeting of the Medical Society of Virginia, at Virginia Beach, October 6-8, 1941.

reasonably hold it to be true of cancer of the stomach. It is to be expected that a chronic, irritating lesion of the stomach such as a peptic ulcer may develop into cancer. And still, on the other hand, Dr. Margaret Warwick has shown that in a series of 176 cases of gastric cancer only 55 per cent of these lesions are ulcerated. From this we are sure that not all gastric cancers arise from ulcers, nor even as high a percentage as 50 per cent, as maintained by some, but possibly 20 per cent to 25 per cent which is now the usually accepted figure.

If an early diagnosis is to be made, the first and apparently trivial symptoms, especially in those over 35 years of age, must be recognized. Any irregularity referable to the gastro-intestinal system should be adequately investigated and not merely called indigestion and neglected. A most important fact to bear in mind is that the symptoms of gastric cancer are not typical. It is essential to get away from the textbook picture of gastric cancer. If we wait for such signs and symptoms as cachexia, palpable mass in the epigastrium, anemia, hematemesis, and enlarged Virchow glands, no operation or treatment will be of any value.

Gastro-intestinal symptoms, which are not due to obvious causes, should be studied persistently until their etiology is known. One of the first procedures to be carried out after a careful physical examination has been made is a gastric analysis. The presence of blood and low acidity or the absence of free hydrochloric acid in the gastric juice should make one doubly careful, but the presence of free hydrochloric acid does not rule out cancer as will be shown in two of the cases to be reported. Following these procedures, a gastro-intestinal x-ray study by an experienced roentgenologist should be done and repeated if necessary, for occasionally small lesions will escape the attention of the most careful examiner, and it is more important to find the small and early lesions where cures may be expected than the larger lesions which may have a doubtful outcome.

A gastroscopic examination is often very helpful in making a diagnosis, especially if the lesion is in the cardiac end of the stomach. These examinations are now made with very little discomfort to the patient and practically no danger when the Schindler instrument is used in competent hands.

A gastric ulcer should be watched with extreme care, and if not cured in six to eight weeks of adequate medical treatment, the lesion should be removed by surgical excision. If the ulcer heals, repeated x-ray examinations should be made at intervals over a period of several years, for it is a well known fact that these ulcers may recur or a malignancy may originate on the old scar.

Many authorities are of the opinion that if the ulcer is on the greater curvature of the stomach and can be so demonstrated by x-ray it will always prove to be cancerous and no time should be lost by trying medical treatment. Ulcers that are 2 cm. in size or larger are often considered to be malignant, but this is not always true, for I have recently had a case in which the ulcer was over 2½ cm. in diameter and was proven to be non-malignant. On the other hand, I have also seen ulcers of 1 cm. or less in diameter which were malignant.

Fig. 1.—Specimen removed at operation from case 1 showing the carcinomatous lesion in the pyloric end of the stomach.

It must be remembered that under medical management most cancers of the stomach, especially in the early stage, will show a temporary improvement but this fact should not throw us off in making a correct diagnosis and carrying out immediate treatment. Once the diagnosis is made or even reasonably suspected, nothing should prevent immediate preparation for an exploratory operation and resection.

The only known cure for cancer of the stomach is gastric resection. X-ray is invaluable in arriving at a correct diagnosis, but is of very little curative value in the treatment of this condition, and vigorous application of external irradiation may injure

the liver and pancreas and do more harm here than good in these cases.

The operation of choice varies in the hands of different surgeons. We believe that the Horsley modification of the Billroth I is preferable in the

Fig. II.—Photomicrograph of specimen in Figure I showing adenocarcinoma, grade 4.

great majority of cases where a partial gastrectomy is indicated, whether this be from cancer or other lesions. Lower operative mortality and a higher incidence of cure has recently been reported by Walters when the Billroth I principle was used in cases of cancer of the stomach. Walters reports 29 per cent five year survival in all cases that were resected, and 35 per cent 5 year survivals when a Billroth I type of resection was used. His hospital mortality following this latter type of operation was 11 per cent which was the lowest rate in his series. Of course, in the unusual case such as when the lesion is in the cardiac portion of the stomach, other types of resections will be more practical. I am fortunate to be able to say that I have had no hospital deaths following the use of the Horsley modification of Billroth I and I have used it in many different types of cases.

In the past few years we have been using a tube gastrostomy instead of a nasal gastric tube. This is better tolerated by the patients, there is no chance of pharyngeal irritation, and the tube may be left in place longer without any discomfort or danger. This type of gastrostomy has been described by Dr. J. S. Horsley in previous papers and consists of a small catheter placed in the stomach through its anterior wall and brought out of a stab wound to the left of the abdominal incision. Since using this method, I have had no cases in which there was any leakage either before or after removal of the gastrostomy tube, and these wounds always heal satisfactorily.

If metastases are found and there is pyloric obstruction, some type of operation should be done to relieve the obstruction even if there are metastatic nodes in the liver. Here a resection is preferable to a gastro-enterostomy, provided the resection can be carried out through normal tissues. If this is not possible, the suture line will break down, so it would be best to do a side-switching operation through normal tissue.

The pre-operative and post-operative treatment is most important in these cases. These patients should

Fig. III.—Specimen showing adenocarcinoma of the sigmoid removed from case 1.

have several days of rest, adequate fluid, caloric and vitamin intake before operation is undertaken, because most of them have had insufficient ingestion and absorption of food for some time. If there is any obstruction, frequent gastric lavages should be

Fig. IV. Gross specimen from case II showing large ulcerated carcinomatous lesion with raised indurated edges.

carried out and dilute hydrochloric acid added to the intake when free acid is absent. Transfusions are invaluable in these cases, for they not only add to the oxygen-carrying power of the blood but also, which is just as important, to the serum protein. Continuance of these principles, including oxygen therapy, is followed during the post-operative period.

The following four illustrative cases are briefly reported:

CASE NO. 1

H. H. W., male, age 38 years, had had indigestion for five years, but his condition had become worse one month before admission to Sheltering Arms Hospital. X-ray examination showed complete obstruction at the pylorus which was thought to be due to an ulcer, although a mass was noticed in this area. The rest of the gastro-intestinal tract was reported to be normal. The patient had had a positive Wassermann ten years previously and had been given anti-luetic treatment. His Wassermann on admission to the hospital was negative.

On December 9, 1938, after pre-operative treatment, the operation was done under local (procain hydrochloride) anesthesia. A hard firm mass was found on the lesser curvature of the stomach on the pyloric side of the sphincter. There was no evidence of metastasis and all of the small bowel was collapsed. The Horsley modification of the Billroth I operation was carried out. The specimen showed a large infiltrating area which proved to be adenocarcinoma, grade 4.

The patient's immediate convalescence was uneventful, but ten weeks after the original operation he was re-admitted to the hospital with the diagnosis of intestinal obstruction. A flat x-ray plate showed obstructed loops of small bowel and it was thought that the obstruction was due to an adhesion. At operation an annular carcinoma of the sigmoid was found. It was removed by an obstructive type of resection. A cecostomy or enterostomy at this time would have been better as the obstruction had already been present for several days, but this was not done until five days later. Fecal fistulae developed which would not heal in spite of all measures. Later he developed pneumonia and died five weeks after the last operation.

A report by Dr. A. C. Broders on this case is as follows: "The section from the stomach shows a high grade 4 adenocarcinoma while the section from the sigmoid shows a low grade 3 adenocarcinoma. I agree with you that you are dealing with two separate primary growths."

This case is unusual because of the two primary malignancies of the gastro-intestinal tract. At the

time of his death there was no evidence of recurrence of the gastric malignancy.

CASE NO. 2

T. B. R., male, age 51 years, was admitted to St. Elizabeth's Hospital, complaining of pain in the upper part of the abdomen. He stated that he had

Fig. V.—Photomicrograph of specimen removed from case II.

had indigestion at intervals over a period of one year, but his wife said that he had complained of indigestion for five or six years. He had not consulted a physician until the day before admission when the pain became so severe he required a narcotic for relief.

The physical examination showed the patient under-weight, with poor mouth hygiene and many dead and carious teeth. There was some pain and tenderness in the upper abdomen, but this was not marked.

The x-ray report was as follows: "There is a large penetrating ulcer on the lesser curvature five inches above the pylorus. This may be an extremely large penetrating ulcer or an ulcerating malignancy."

Gastric analysis showed free acid of 22 and combined of 50.

On March 31, 1940, the day before operation was planned, the patient developed a sudden and severe upper abdominal pain. It was thought that the ulcer was leaking, so an immediate operation was performed, using the Horsley modification of Billroth I and resecting about two-thirds of the stomach. The leakage had been walled off by the mesentery and there was no evidence of metastasis outside of the gastrocolic mesentery. Microscopic section showed grade 3 adenocarcinoma.

The patient made a very satisfactory convalescence and was discharged from the hospital three weeks following operation. He has remained well and is doing his regular duties on his farm without any impairment of health.

An interesting fact in this case was that, although free hydrochloric acid was present in the gastric juice, this patient was found to have cancer of the stomach. There was also a beginning leakage of the ulcer. That this latter is often a cause of death is brought out by Warwick in her article "Analysis of 176 Cases of Carcinoma of the Stomach Submitted to Autopsy" when she demonstrated that in 22 per cent of these cases death was caused by perforation of the cancer.

CASE NO. 3

R. V., colored, male, age 58 years, was first seen in May, 1936, at the Retreat for the Sick Hospital, complaining of indigestion for the past several

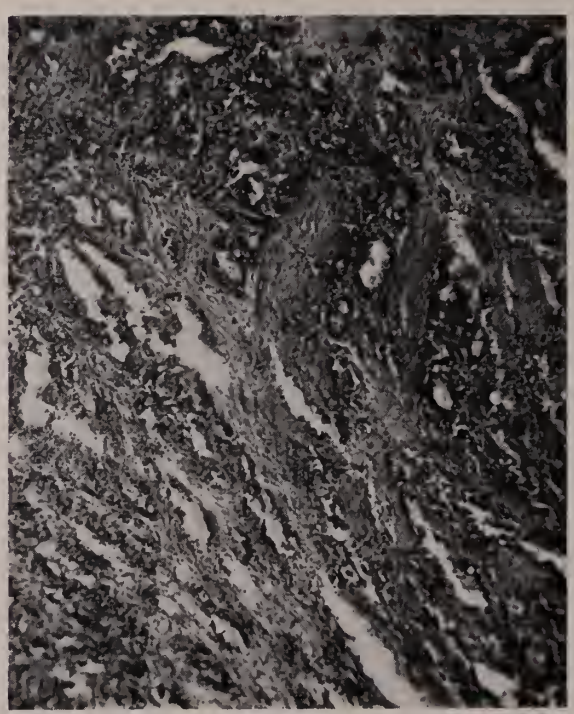

Fig. VI.—Photomicrograph of specimen removed from case III showing adenocarcinoma, grade IV.

months. X-ray examination showed an infiltrating lesion, thought to be cancerous, involving the distal 6 cm. of the stomach.

The patient was operated upon June 2, 1936, and a large indurated growth in the anterior wall of the pylorus, mainly along the greater curvature, was found. There were numerous metastases throughout the lymph nodes in both gastrocolic and gastrohepatic mesentery, but because of imminent obstruction a resection was thought to be the best procedure.

About two-thirds of the stomach and the enlarged lymph nodes were removed by doing a Horsley modification of the Billroth I operation. A large infiltrating carcinomatous ulcer was found which measured 7 x 6 cm. Microscopically it was a grade 3 plus adenocarcinoma.

Fig. VII.—Gross specimen removed from case IV.

The patient was discharged from the hospital in good condition, and returned to his usual occupation but in the spring of 1937 (one year later) he returned, complaining of nausea and loss of weight. A definite mass was found in the upper abdomen which was thought to be a recurrence of the growth. He was advised to take some deep x-ray therapy which was given by Dr. Wright Clarkson, of Petersburg, Va. Following this, the patient immediately began to improve. The treatment was continued for several weeks and was repeated at intervals. He was able to return to work for a short time and finally died from recurrence about two years after the original operation.

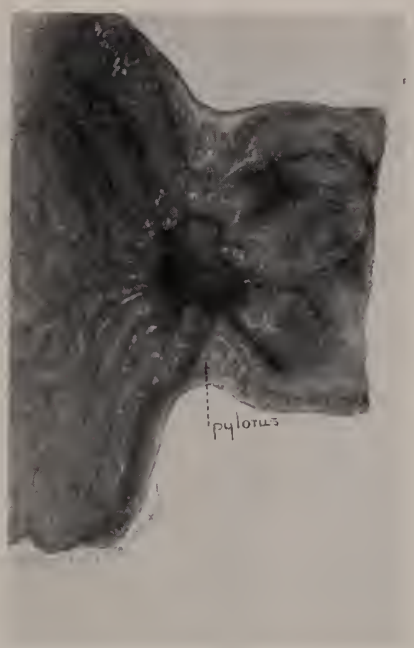

Fig. VIII.—Inside view of figure 7 showing early carcinoma which has developed on an ulcer in the pyloric sphincter.

In this case it was a question as to whether a resection was justifiable since a complete cure could not be anticipated. But with the resection and the help of deep x-ray therapy he lived for two years in apparent comfort and was able to do most of his normal work. If the resection had not been done he would probably have died within a few months from obstruction.

CASE NO. 4

J. F. W., male age 54 years, complained of pain, nervousness, and indigestion, for twenty years. This had been definitely worse for the past few years. The physical examination showed the patient to be

a large man who had recently lost a good deal of weight.

X-ray examination showed an obstructive lesion in the pylorus which was thought to be an extensive carcinoma of the stomach in spite of free hydrochloric acid in each specimen of the gastric juice.

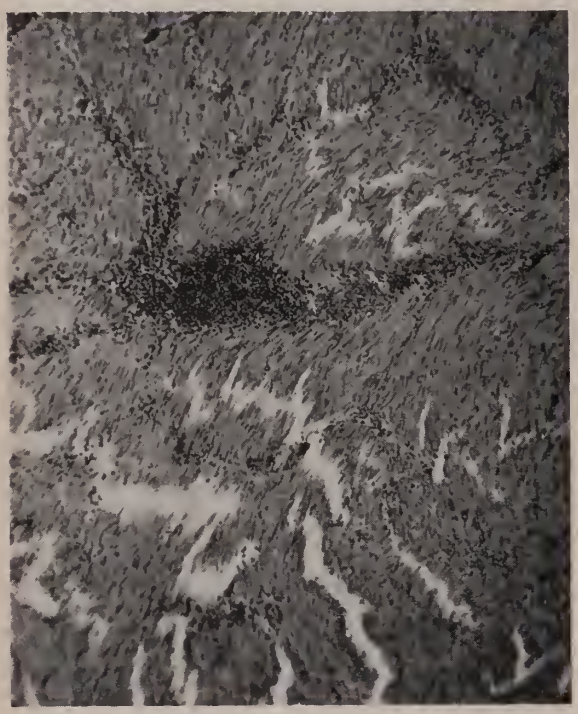

Fig. IX.—Photomicrograph of case IV showing a scirrhous type of carcinoma.

At operation on April 20, 1940, in St. Elizabeth's Hospital, a hard indurated lesion thought to be cancerous was found in the pyloric end of the stomach. No enlarged lymph nodes were noted, but a small piece of omentum was adherent to the anterior part of the growth. The Horsley modification of the Billroth I operation was carried out. The entire pyloric end of the stomach was indurated and in the middle of the specimen was an ulcer 2½ cm. in diameter and 1 cm. deep. Microscopically, this showed scirrhous carcinoma, grade 3.

The patient's convalescence was uneventful and there has been no recurrence of his symptoms. He returned to work eight weeks after his operation and his only complaint has been an excessive gain in weight. He weighed 182 pounds on discharge from the hospital, and four months later he weighed 240 pounds, which he said was his average weight.

This patient also had free hydrochloric acid and symptoms of many years' duration. The malignancy apparently developed on an ulcer of long standing. From the x-ray studies it was thought that the case was inoperable, but fortunately it was resectable.

This case helps to strengthen our conviction that all cases should have the benefit of an exploratory operation with a biopsy, unless definite metastases are found outside of the peritoneal cavity.

Conclusion

The important point in cancer of the stomach, as in all cancers, is an early diagnosis. Trivial symptoms from the gastro-intestinal tract should be given serious consideration and the cause of these symptoms should be definitely and satisfactorily determined.

Surgical excision is the only known method of curing cancer of the stomach, and the resection should preferably be carried out so that the gastro-intestinal tract is returned as nearly as possible to normal.

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Discussion

DR. EDWIN P. LEHMAN, University: I have been greatly interested in Dr. Horsley's excellent summary of the problem of gastric carcinoma, and I am in entire agreement with most of his conclusions.

Although there may be varied opinions on the details of treatment, the problem of gastric cancer, as Dr. Horsley so well emphasizes, is uniformly understood as a problem of early diagnosis. Surgeons are willing to perform a percentage of negative explorations after proper study in order to diminish the mortality of acute appendicitis; and their medical colleagues have been taught to accept these unfortunate operations as a sort of insurance against more serious consequences. There is little doubt that with present knowledge the mortality of gastric cancer will not be greatly diminished until such attitude becomes general in this field also. Medical men have a fear of gastric operations which is an important influence in the delay that brings patients to the surgeon, a fear justified by the relatively high mortality of the surgery of gastric cancer even in the most experienced hands. For this high mortality, however, the medical man is himself partly responsible; it includes opera-

tions on a few early cases and vast majority of advanced cases with huge ulcers and even metastasis. There is no doubt that in the resection of a large series of really early cancers the mortality would approximate the quite moderate risk of gastric resection for benign ulcer. At present a vicious sequence is established. The medical man, knowing the published figures, wants to be sure he is dealing with cancer before advising surgery; and when he is sure, he has contributed to the group of bad-risk cases that keep the mortality up.

A great deal has been written about the transformation of benign gastric ulcer into cancer and the most widely varying estimates of the incidence of this occurrence have been made. It has long seemed to me that this emphasis confuses the main issue and is largely of academic interest. No doubt such a transformation occurs in the chronic ulcer of the stomach; we can see it occur in the chronic ulcer on the surface of the body. But the problem we face when confronted by the patient with a known organic lesion of the stomach is not importantly related to the question of a previous benign gastric ulcer. The sole question to be asked is whether the presenting lesion is benign or malignant at the time the patient comes under observation.

The difficulty of answering this question in the early or relatively early case is familiar enough. Given a patient with suggestive symptoms and an x-ray diagnosis of a gastric lesion, we must evaluate eight criteria: (1) Age. (2) Duration of symptoms. In malignant lesions, the average is weeks of symptoms as compared to months or years in benign ulcers. (3) The presence or absence of hydrochloric acid in the stomach. (4) The size of the ulcer. (5) The location of the ulcer. (6) The presence or absence of anaemia. (7) The weight curve. (8) The state of the appetite. All of these must be estimated and weighed. As Dr. Horsley has rightly stressed, any one or all of them may be entirely deceptive. What may be called the typical case of benign ulcer will present the following clinical characteristics: an individual under 40 years of age with symptoms lasting months, whose gastric acidity is normal or high, whose x-ray shows an ulcer crater less in size than the diameter of a quarter, situated high on the lesser curvature of the stomach, who has no anaemia in the absence of severe haemorrhage, whose weight loss has been slight or moderate and who retains an excellent appetite. In contrast, the typical cancer case occurs in an individual over 45 years of age, whose symptoms may have only recently begun, who presents achlorhydria, whose x-ray shows an ulcer larger than a 50-cent piece located on the lesser curvature near the pylorus or on the greater curvature, who has a profound anaemia whether or not gross haemorrhage has occurred, whose weight loss is marked and progressive and whose appetite is nil. As Dr. Horsley says, if the typical case of cancer presents, it is probably already inoperable. The earlier the case, the more nearly it conforms to the picture of the benign lesion. All these contradictory and confusing considerations are of exaggerated importance in the not infrequent case of cancer of the stomach before the age of 40 years.

In conclusion, then, the important thing is the diagnosis of the presenting lesion rather than a guess at its primary or secondary origin. In young individuals, a therapeutic test of non-operative management may be made, with the proviso that clinical, radiographic and, when available, gastroscopic evidence all are in complete agreement to the effect that healing has promptly begun. Dr. Horsley devotes six to eight weeks to such a test; others, including Lahey, consider that surgical exploration should follow if healing is not apparently complete within ten days to two weeks. It all adds up to the necessity to advise gastric exploration in all cases not clearly benign.

DR. J. SHELTON HORSLEY, Richmond: The paper calls attention to an extremely important subject, cancer of the stomach. As has been mentioned in the paper, cancer of the stomach is responsible for far more deaths than cancer of any other one viscus. The absence of operative mortality reported by Dr. Guy Horsley in his cases of cancer of the stomach is striking, particularly as some of these patients were bad risks.

Another important feature that he brought out is the necessity of early diagnosis, together with the fact that practically all early cases of cancer of the stomach can be symptomatically relieved by medical treatment such as is given for peptic ulcer. Unfortunately, this has been regarded as a therapeutic diagnosis just as when quinine is given for fever and the temperature returns to normal within a short time. It has been considered that this is a therapeutic test for malaria, whether or not plasmodia are found in the blood. This test appears to be of considerable value in many cases. The therapeutic test for excluding malignancy in a gastric lesion, in which the symptoms disappear with medical treatment, is however, extremely fallacious. It was reported from the Mayo Clinic that about 81 per cent of the cases of cancer of the stomach that have been referred to the Clinic have in the early stages of the disease been relieved for a while by medical treatment.

Tragedy after tragedy has occurred because it has been assumed that when medical treatment of a gastric lesion relieves the symptoms malignancy is thereby excluded. It is important to be on the lookout for malignancy of the stomach and to be suspicious of it. It is well known that when anyone is interested in a particular disease, he is more likely to find that disease than someone else who does not suspect it.

The most important means of diagnosing a gastric lesion is x-ray. A competent gastroscopic examination is also important. The smaller the lesion of the stomach, the more difficult is the diagnosis, and yet, as elsewhere, the more essential it is for early treatment to be instituted. A duodenal ulcer may be treated indefinitely medically, unless there is some complication, such as hemorrhage, perforation or obstruction, but any gastric ulcer should be regarded with suspicion until it has been definitely proved to be benign. It is better to have a partial gastrectomy done by one trained in gastric surgery, when there is a reasonable chance of the lesion

being malignant, than to wait for too long a period until the diagnosis can be positively made and the chances of cure even by operation will be materially diminished.

I am a little surprised at the statement of my good friend, Dr. Lehman, for it seems to indicate that in spite of the Government's efforts, inflation has at least reached Charlottesville. He says that an ulcer of the stomach the size of a half-dollar is distinctly suspicious of malignancy. We hold that the evaluation of a quarter would be better.

SURGICAL INDICATIONS FOR THE USE OF BLOOD PLASMA*

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and
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The object of this paper is to present the clinical use of plasma in surgical practice, using as a basis over fifteen hundred cases in the past two years. Though experience may not be infallible, it still remains the best teacher.

Plasma is a legacy of blood transfusion, but has not replaced it, for there remain definite indications for both in their respective fields. The subject should be approached with a knowledge of the fundamental differences between the two fluids. If the cells are removed from whole blood, before clotting, the pale, straw-colored fluid which remains is plasma, consisting of the sodium, potassium and calcium salts, sugar and proteid, in solution. Other organic and inorganic bodies are present in an almost negligible amount. The plasma is usually obtained in one of two ways; first, by allowing citrated blood to stand one to two weeks, and decanting the plasma, which rises above the sedimented cells, or by a specially prepared flask, removing the cells from the bottom of the vessel. Another and more efficient method[1] is by centrifugation, permitting the acquisition of a greater amount and usually a clearer plasma. The second method is the one in more general use.

Plasma obtained by what is generally known as the closed method, that is, elimination of air contamination by open mouth flasks, is an almost clear, straw-colored fluid with a slightly mucilaginous consistency. If diluted with equal parts of normal salt solution, it is known as saline plasma. This addition is usually made because it accelerates the flow through a fine needle and the sodium chloride is often desirable in the treatment of both hemorrhage and shock.

Saline plasma is kept in an air-tight flask or bottle upon a laboratory shelf and we know that, if sterile, it can be used a year later without the least apprehension. We do not recommend refrigeration, except for a brief period, but, if once placed in a cool chamber, it should be kept there until used. Two hundred and fifty c.c. of plasma, and sometimes more, can be obtained from five hundred c.c. of citrated blood.

The role played by plasma in surgical practice depends on its ability to replace proteid when that complex substance has escaped from the blood stream. Sufficient attention has not been given in the past to the part that blood proteids play in both health and disease, but now their importance has been recognized and emphasized, first by the research laboratory and then by the clinic.

It is accepted without question that regardless of the factor initiating shock, its ultimate effect is *loss* of plasma from the bloom stream; unless the *loss* can be arrested or replaced, irreparable cell damage and death will follow. When the loss is rapid, following injury or operation, we speak of it as primary traumatic or surgical shock and, of necessity, it varies in degree and duration.

Loss of plasma is not from the open blood vessels alone, but the greater loss is through the permeable walls of the capillaries. In burns and debilitating conditions, such as persistent vomiting, intestinal obstruction and alimentary fistulae, plasma is lost through the capillaries over a variable period. Analysis of the blood in burns, and the other conditions mentioned above, shows the proteid content of the blood reduced from 7.5 grams to 5.5 grams or less, and the condition is known as hypoproteinemia. Both shock and hypoproteinemia can be readily checked by the laboratory with determination of the protein content by the falling drop method,

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Read before the Medical Society of Virginia at its annual meeting at Virginia Beach, October 6-8, 1941.

the percentage of cells by the hematocrit, and by the red cell count and by the specific gravity of the blood.

Reverting to the consideration of shock, we have found that variations in blood pressure furnish an index that is clinically *dependable* and *prompt*. We do not wish to disparage the use of the laboratory. Having had an ample opportunity to compare both means for the determination of shock, we do not hesitate to depend upon blood pressure as a routine guide. In description by Vaughan[2] of the treatment of shock and burns following bombing attacks on London, it stresses the importance of blood pressure as an index, but notes that the pulse rate is inconsistent and not a reliable guide. With these statements we are entirely in agreement.

Eighty mm. of mercury is considered the lowest level of systolic blood pressure compatible with efficient circulation, but of necessity there are exceptions. It is known as the critical level. When the systolic pressure approaches or falls below this level, shock is present or imminent and appropriate steps should be taken to combat it. We believe that *plasma is the best single agent available*. Generally the pressure will be raised 10 to 20 mms. by five hundred c.c. of saline plasma or straight plasma and if the cause of shock is removed or abated, the systolic pressure will gradually seek its normal level. However, if the factors which have produced shock continue to operate, additional plasma must be used, intravenously by choice, but subcutaneous or intramuscular routes are practical.

In the presence of shock, without hemorrhage, the blood is concentrated; the count of the red cells may be as high as 7,000,000 and the specific gravity is increased. Whole blood transfusion increases the concentration, and, while admittedly a valuable agent, owes its virtue to the plasma content rather than the cells. It is evident, therefore, that plasma alone is superior to whole blood in shock without hemorrhage. Saline and glucose solutions remain in the blood stream but briefly, while acacia solutions, on the other hand, become a permanent addition.

In conditions of shock in which the hemoglobin is below 50%, whole blood is by all odds the choice of intravenous fluids.[3] It is not always possible to differentiate between shock with and without hemorrhage, particularly in the traumatic cases. Plasma recommends itself in shock[4] and hemorrhage because it can be given as quickly and as safely as salt solutions. This is such an important consideration that no hospital doing a moderate amount of major surgery or obstetrics should be without plasma available at all times. The manner in which plasma is prepared at present permits its intravenous use merely by attaching a sterile tube and needle to the container. Typing or warming is unnecessary.

We have given 4,000 c.c. of saline plasma within twenty-four hours to a single patient and as much as 40,000 c.c. to one patient over a period of several weeks. In a series of over 1,500 plasma transfusions, of which 90% were intravenous, there have been but 16 reactions, none of which were serious. Nine of these reactions occurred in patients in whom we were working out nitrogen balance, and plasma was not used therapeutically but in a physiological way. It was interesting to note that one patient had two reactions, another three and four occurred in another.

In addition to shock and hemorrhage, burns offer a field for plasma.[5-6] It has long been observed that the seriousness of a burn is in direct relation to the extent rather than the depth or intensity. It has been accepted for years that a toxic substance is elaborated by a burn, and the absorption of this substance is the cause of death. It can be definitely stated that the cause of death is loss of plasma, both in the extra-vascular spaces and in the blebs of the burned area. This is a type of shock that begins acutely and extends over a period of several days. In burns, plasma should be used throughout the period of shock or hypoproteinemia.

In the presence of intestinal obstruction,[7] persistent vomiting and fistulae of the gastro-intestinal tract, the proteid reserve of the body is called upon to replace the loss of proteid which usually accompanies these conditions. The loss of proteid can be measured quickly by using the falling drop method of estimating blood proteid.

Plasma is of inestimable value in such cases and there is no satisfactory substitute for it. Whole blood does not completely meet the requirements as it adds red and white cells to a blood stream that has lost none of its cellular elements.

Plasma will not close a fistula or release an obstructed bowel, but it may render a patient operable who otherwise would be rejected as a bad risk. Only recently we had under our care a case of intestinal obstruction whose condition was critical. We felt transfusions of whole blood or plasma were indicated. The patient was type B (or 3) and thirty voluntary donors offered their blood. According to the law of

averages we could have used but three for transfusions, but for *plasma,* the *entire group* was at our disposal. We did not need them all, but we did use considerably more than three.

We have found plasma useful in some liver deficiency states, but so much unclassified information is associated with liver disease that we cannot, with a sufficient degree of accuracy, pronounce indications for the use of plasma. However, it certainly has a place in the treatment of impaired liver function.

SUMMARY

The preparation of plasma is no longer difficult and it should be stored in every hospital doing a moderate amount of major surgery or obstetrics. It is particularly useful in shock with or without hemorrhage, as the time required for its use is negligible, typing is unnecessary, and reactions are infrequent and mild. Furthermore, and even more important, its use is rational because it replaces plasma which has been lost through the capillaries. There should be no hesitation in repeating the transfusions[8] and 4,000 c.c. of saline plasma may be given within twenty-four hours if the indications warrant.

It is the remedy of choice in burns and should be used over a period of days in doses from 200 c.c. to 500 c.c. In acute intestinal obstruction, hypoproteinemia from vomiting, or in gastro-intestinal fistula, plasma is a sustaining agent that oftimes makes an inoperable case an operable one.

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DISCUSSION

DR. CHARLES M. CARAVATI, Richmond: We should feel complimented in having Dr. White come down here and present to us his experience in over fifteen hundred transfusions in two years. That is a wide experience. It covers experience in shock, burns, hemorrhage, and other conditions in which there is protein loss, this loss being due to the permeability of the blood vessels and escape of the proteins into other structures. Plasma is more valuable than whole blood, particularly when you do not need blood cells; therefore, in the absence of anemia it is particularly good. As pointed out, a large quantity can be used at a time, the preparation is easy, and you do not have to type it. Its chief action is in preventing edema both peripheral and visceral. It supplies the protein that is depleted and its colloid nature will absorb the fluid from tissue. Ravdin and his coworkers show there is a delay, or inhibitory action, along the g. i. tract where there is protein lack. This may be prevented by the use of plasma, particularly after gastro-enterostomy; it will aid in reduction of edema around the stoma and it is thought that the normal protein level aids in wound healing.

In toxemias, as severe burns, etc., the hepato-renal syndrome may be prevented by the use of adequate plasma. It acts here like acacia. It increases the plasma colloid pressure of the serum and this in turn initiates normal renal function. If in burns or after operations, particularly along the biliary tract, the signs of hepatic insufficiency are observed, such as deepening of the icterus, cyanosis, orthopnea, progressive oliguria, rising level of bilirubin, decrease in liver function, then give large quantities of plasma as soon as it is practical, together with d-glucose in saline.

Protein in the form of plasma will assist in the utilization of other fluids and it is the most satisfactory agent for replacement therapy when a more physiological state of gastro-intestinal activity is desired.

I feel privileged in being allowed to discuss Dr. White's paper.

THE PHYSICIANS' RESPONSIBILITY IN LOCAL AND NATIONAL DEFENSE*

ERNEST T. TRICE, LT. COL., M. C., N. G. U. S.,
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I accept your invitation to speak to this intelligent, loyal group as an honor and with much pleasure. This honor and pleasure is unique for two well-defined reasons. The first reason why I am pleased with your invitation is that this visit affords me an opportunity to express to you publicly the gratitude of Governor Price, Colonel Neal, and of course myself for the fine patriotic service that you have rendered the Selective Service System.

My greatest pleasure, however, is the inspiration that one obtains from being at Petersburg and recalling that in June, 1864, General Lee, General Beauregard, and other noble Confederates faced as grave a military problem as they had ever faced before. Strong forces appeared before Petersburg on June 15. Beauregard made a splendid fight; no one could have done better in fighting the whole army of the Potomac than he did. His bayonets almost closed the road to Petersburg, and while General Lee did not discharge his mission, he surely did delay Grant's. Such memories as these, recalling the bravery of our ragged fathers, their action and conduct on this spot of land, is enough to make one proud to be in Petersburg.

General supervision of all medical matters is the function of my office at State Headquarters, but the tiresome, uninteresting detail of examining registrants falls upon our State physicians. As examining physicians for Selective Service, the physicians of this district are symbolic of hundreds of other physicians who are engaged in this system, and I want to pay, here and now, a tribute to the magnificent work which has been performed by the Southside physicians.

When we realize that all but a very small number work entirely without pay, we have some measure of the efforts which are being given day in and day out by members of our profession, so that the Selective Service System may continue to operate.

It is obvious, therefore, that the physicians of our State are fully aware that the success of this System in the past, in the present, and in the future, lies entirely in the hands of these hundreds of physicians, who give so much of their time and talent. You, through the months that are behind us, through times when few thought that we should ever find it necessary to procure men to fight, worked quietly, industriously, and efficiently to assure us that, when and if the time did come, detailed plans would provide adequate cooperation from your group.

I come before you now with a feeling of humility, and of pride in our profession for cooperating with my efforts, making my office a successful one, and fulfilling the liability that Congress has placed upon us to procure a sufficient number of physically suitable adults for our armed forces. My feelings, therefore, toward our profession and especially toward your membership are based on a far broader conception than mere coincidence.

These are serious times in the life of our Nation. We are in the second campaign of a World War which began over twenty years ago. It is quite unnecessary to emphasize the situation at the present, which places upon each individual the necessity for readjusting his way of life.

We have just passed through a remarkable series of historical incidents, beginning with December 7, when we as a Nation were shocked by treacherous violation of our freedoms. Exactly one week later the Nation passed through a further celebration of the 150th Anniversary of our "Bill of Rights", which defines those very freedoms, and now we have finished the celebration that began ten days later, the Christmas season, which, as the highest symbol in Christian civilization, celebrates the very fountainhead of those freedoms. Such a series, rising to its climax, has brought us a sense of rededication to those freedoms.

Our most optimistic estimates of the future are not reassuring. It seems to be generally admitted that we as people and we as physicians must consider carefully our future course, and having decided upon the objective for which we will strive, having planned the means and the methods that we will use, we must then decide what part each individual is to play in the pattern in the teamwork

*Read before the Fourth District and Southside Virginia Medical Association at Petersburg, December 30, 1941.

of the future—in the work, if you will, which this Nation must do if it will preserve itself. There is the obvious demand for a cooperative spirit among all of our physicians, for in cooperation there is unity, in unity there is strength, and a nation which is strong, a profession which is strong, can attain and hold the objectives essential to the preservation of its National existence.

Organized medicine is occasionally threatened, and it is the responsibility of every physician to be alert in preserving our Doctrine Number One, which is that practice which is best for the patient and has scientific background. The accomplishment of all doctrines and purposes is a task for all.

On the subject of our medical responsibilities, medical service to the armed forces is but one phase of our National effort. Our group of physicians must sustain and bear the burden of many other activities, so necessary in a complete defense. There will be work, much work, hard work, work for all. There is and will be essential services which each and everyone can perform, but despite other available assistance, our group of physicians constitutes the backbone, the mainstay of those whose efforts in medical examinations, medical service, civilian epidemics, public health matters, cooperation with the American Red Cross, and in a multitude of other ways, will not fail in the maintenance of National health.

In the Fourth District there are many skilled specialists, many noble, general medical practitioners representing different ages and various degrees of maturity. Biologically, your group, then, is a critical one for our civilization and for the Nation.

Yes, it is a serious responsibility that the physicians have today; the health of the Nation is in your hands. Our Country furnishes many teachers of good medicine, many leaders to uphold good doctrines of practice. They possess flexibility, and yet are stabilized, and provide force that will ultimately give direction in training to those who one, two, or three decades from now will carry the torch which you bear.

We are on a road beset with danger. Imperial Japan has come to a showdown with the United States. Dislocations have been occurring for the past years. Many continents are involved. How long our continent may escape the unhappy state of being the battleground of contending forces we cannot say. Thought and leadership today and tomorrow is your contribution. The future of medicine, and perhaps of civilization as we have known it, depends to a very large degree upon your efforts to maintain the doctrines of organized medicine, to support good medical leadership, because the defense picture is just as broad as that.

We read much about soldier morale, and unless we stop and think, we will find ourselves believing that soldier morale centers around moving-pictures and dances. More mature thought, though, supports the belief that good morale comes from confidence in leaders. Locally and nationally in organized medicine, we have wise leaders, we believe in them, and we have morale.

Our people have restrained themselves beautifully as to their comments on the disaster of December 7. We were caught off guard and greatly reproach ourselves, and from that recent lesson may we be sure that we physicians in our turn permit no delay, or anything in the way of obstruction, which will be a reason for us to reproach ourselves. Should surprise overtake us, as it did at Pearl Harbor, we would regret, as these Commanders do, that essential machinery including support, that we as physicians are in a position to give our American Red Cross, had not provided for the wounded.

To achieve our goal requires effort on the part of all, effort by our trained specialists, effort by our hospital groups, and effort by our city and rural practitioners; but all these efforts by all these different kinds of physicians will be of little avail unless the effort is united, and one of the many things to learn is that we are our brother's keeper. There are medical standards to preserve, medical education to provide, and how can one expect to maintain traditional doctrines of good medical practice without effort to insure the preservation of its fundamentals.

The obligations of defense are making heavy demands upon our profession. The Government as a representative of the whole people has a right to demand the services of physicians. Our attitude should be a willing one, because several millions of young men are waiting for equipment, and who knows but that this time may or may not be measured in the blood of your son and mine. You and I and the Government should not tolerate delay in whatever is before us.

Medical Arts Building.

THE RORSCHACH INK BLOT METHOD*

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Nearly everyone whose interest lies in the study and treatment of personality disorders is aware that a procedure known as the Rorschach test has become prominent in literature. Yet today there are only a few psychiatrists who really are familiar with the technic. Although it is now seventeen years since the method was introduced in the United States[1], the majority of practicing psychiatrists still consider the "Rorschach" some sort of abstruse German philosophy or a psychological fad.

Several reasons for this state of affairs are apparent. With the exception of a few notable reports[1, 2, 10], articles describing Rorschach experiments in psychiatric journals usually assume, for the sake of brevity, that the reader is familiar with the ink blots which form the basis of the method. This is usually an unwarranted assumption and has rendered the majority of such reports practically incomprehensible to the uninitiated. As a result, an interesting and most useful implement for investigation has been limited to a relatively small number.

Some enthusiasts have made extravagant claims as to the diagnostic value of this procedure, possibly hoping thus to popularize it. Such claims have naturally led only to distrust in conservative quarters. This has not helped to bring the method into good psychiatric repute. It is also possible that traditional medical prejudice against academic psychology has been active, for the Rorschach test is fundamentally a psychological technic and has been largely taken over in this country by psychologists[3]. But most important, the original work[4] is in German and no official English translation is available even today. Were it not for this, a much greater number of workers would undoubtedly be found among American psychiatrists.

In spite of these impediments, a review of training facilities[3] indicates a widespread use of the method in important centers of psychiatric research. The authors believe that many psychiatrists are interested in the work but are faced with a lack of easily available information.

The following is a description of the Rorschach technic written for those who are unfamiliar with Rorschach work and based on the assumption that the reader knows little or nothing about the test. Therefore it will be necessary to limit the presentation almost to a demonstration of the blots (Figure 1).

Reproduced are the ten blots used in the original Rorschach technic. For technical reasons it is impossible to show the color which is such an important part of these forms. The second and third blots, pictured here achromatically, actually are partly composed of vivid red, while numbers eight, nine and ten are wholly colored, graduating from gentle pastels to a "violent explosion" of yellow, red, green and blue in the last blot. The blots are affixed separately to cards and are actually much larger than these reproductions, averaging about six inches in width and four inches in height. The subject is given the ink blots to look at one at a time in a standard order with the request to tell, "What it may be."

The psychological process underlying the method is that whatever a subject sees in the blots gives a sensation which evokes a previous, latent memory which in turn is assimilated with the recent perception to make an apperception. The method works in a somewhat analogous manner to that of the free association tests of Jung and Kent-Rosanoff with the exception that in these two tests verbal stimuli are given and some of the words may be loaded with particular recent meanings which may occlude the freeing of deeper material. In the Rorschach test the stimuli are meaningless in that they are actually ink blots, and anything seen in them can be interpreted only as coming from within the individual and being projected on to the blot.

The first blot is popularly interpreted as a bat, bird, butterfly or other winged creature. Less frequently it is seen as a mask, a map or an anatomic

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diagram. Parts of it resemble various anatomic details of men, women or animals. Literally, there are hundreds of possible interpretations for this single blot and also for those which follow.

The second blot contains, and is partly composed of, vivid red. The color comes as a surprise to the subject who has been led to expect from the first card that achromatic blots are forthcoming[2]. The popular response to this card is two animals facing each other; snouts or noses together. Some subjects see clowns dancing. Many other interpretations may be given.

The third blot is frequently taken to be two men or two women facing each other and bowing. Of course, these are not pictures of men or women; they merely suggest human beings to a well developed intelligence. It seems permissible to observe here that whoever cannot see these figures as human figures either does not have an adult imagination or is suffering from some kind of pathologic repression. In this blot the color is confined to the central and lateral details and is not so "disturbing" as in the second blot.

The fourth blot returns to colorless forms and has no popular response; that is, there is no single response that occurs twenty times in one hundred random records[6]. This does not mean that to see something in this card is abnormal, but it does indicate a capacity for creative thinking or image formation if a good interpretation is made.

The fifth card is, of course, almost invariably seen as a winged animal, usually a bat. Inability to interpret this blot in some manner or other borders on the pathologic. Imaginative subjects can see in it many possibilities other than a bat.

The sixth blot is popularly seen as a bear skin

Fig. 1.

rug, not only because of the form but also because the shading gives the impression of the texture of a fur. The top detail is often seen separately as a snake, a dragon fly, a totem pole, or a similar figure.

The seventh blot has no popular response. Clouds are often seen by persons suffering from anxiety, or human figures by intelligent and introspective subjects. It is of interest that this card inverted indicates two dancers. This is mentioned because subjects are permitted to turn the cards any way they choose for interpretation[4].

The most frequently encountered response of all occurs in the eighth blot—the climbing animal seen in the large lateral details. In this blot, color again returns after a long enough absence to have been forgotten by those who were surprised by its appearance in the second blot.

The ninth blot, like the fourth, has no popular response, but many responses less frequent than twenty in one hundred records are encountered. This blot, which is also in color, is one of the most difficult for many subjects.

The last blot has three popular responses: spiders or octopi in the top lateral details; a rabbit's or goat's head in the small central bottom detail; and caterpillars, snakes or worms in the details at the bottom.

These ten blots form the basis of the Rorschach procedure. They were devised by Herman Rorschach after ten years of careful clinical experimental trial with many blots. Only these ten are used. Many uninitiated persons are surprised by this fact for they have somehow erroneously conceived the idea that the blots are produced either by the subject or by the examiner at the time of the examination.

The popular responses to each blot have been listed. Other responses are more difficult to enumerate and many occur not more than once in a hundred records. Such a rare response is known as an "original" response. The original response is considered as indicative of originality while the popular responses are thought to be signs of conventionality. A subject whose responses show an abnormally high percentage of popular responses and no clever or original ones, is likely to be conventional. The reverse is equally true[2]. The perception of unusual figures instead of obvious ones may represent an imaginative type (or it may show merely a form of stubborness or negativism).

Before leaving this topic, it is important to emphasize that this sample has been given for descriptive purposes only. To draw conclusions from one such factor would be ridiculous and unfounded just as well as a diagnosis of appendicitis on the basis of an elevated blood count without taking into account other laboratory aids, history and physical examination. The subject's reaction by "popular" or "original" responses is only one of many factors to be investigated before an interpretation can be valid, and it would be useful for personality diagnosis only if all the other factors agreed.

Actually, the content of the blot is among the least important of the factors for interpretation. Of course, if the subject sees phalic symbols, angels, devils or bizarre and peculiar objects, it is of interest to the clinical psychiatrist who may use the cards in this manner for the beginning of free associations and other psychoanalytic technics. It has been found that the Rorschach blots are particularly susceptible to such usage[1] but this certainly is neither their original purpose nor their chief use.

The variety of forms seen, the repetition or perseverance of single ideas, and many other factors relating to the content are important in the interpretation, but for a full description of content analysis those interested must be referred to articles which deal with this subject more fully[6].

Two other factors are taken into account in scoring, namely the "location" of the response and the "determinant" of the response. Where the subject locates his interpretation is of importance—whether in the whole blot, in a large detail or in a small detail. For example, a bat in I and V and the bowing figures in III are whole forms. Large details are the butterfly in the center part of III, the dragon fly in the top detail of VI, or the climbing animal in the lateral part of VIII. Small details are the mitten-like hands in the top of I, the tent in II and the feet in III. (These are encircled in the reproduction for our purposes. In the actual blots they are much more prominent).

Some subjects will give interpretations comprising the whole blot in each of the ten cards. Others interpret only parts or details of the blot. A definite relative proportion of details to whole forms has been established for the normal subject. Pathologic subjects often interpret a preponderance of small details. According to the Rorschach tradition, a person who responds to the whole forms will probably be fundamentally different in his personality makeup than one whose responses are largely concerned with

small details. A subject who interprets details is more likely to be practical, characterized by common sense and a tendency to face the facts of life, while the subject who interprets the whole blot may be an abstract thinker or one with original, constructive or creative ability[6]. Small details seem to attract the precise, exacting personality while rare details smaller even than the examples given may be found in persons who strive to be original, different or stubborn, or may indicate a definite abnormality, e.g., dementia praecox.

This is, of course, only a outline showing how the location of the blot may enter into the personality interpretation of the subject. It has been noted that stubbornness may show up in the content as described previously. As stated, stubbornness or negativism may also appear in the location of the subject's responses. Thus, a schizoid tendency may produce a Rorschach record weighted with highly original interpretations of tiny, rare details[7].

It must be emphasized that two interpretations of negativism or of any other personality trait are insufficient for diagnosis. A normal person may interpret many rare details with original responses; indeed, the record of many highly intelligent persons show just this tendency.

The third and most important factor of any single response is called the "determinant". The examiner seeks to discover not only *what* was seen and *where* it was seen, but also *how* and *why* it was seen. It is with this factor that the most important personality characteristics are discovered and it is in this section that the Rorschach technic has made its most important contribution to the study and investigation of the mental mechanism. As might be expected, this is the most difficult part of the examination to score. Considerable experience and some training are required before success can be achieved.

After the blots have been presented one by one in what is called the "test proper", they are usually gone over again with the subject in what is called the "inquiry". During the inquiry the examiner learns where the response was located and what determined it. Leading questions are, of course, scrupulously avoided. Considerable skill must be developed to find out, for instance, whether the first blot was taken for a bat because it seemed to be flying, because it was shaped like a bat, or because it was black in color like a bat. Subjects may even say that it is a bat because the texture of the surface is furry.

In brief, the four important determinants are: movement, form, color and shading, and combinations of these elements. Rorschach experts have been able to enlarge upon and expand these determinants considerably and have made important contributions by adding other determinants[6,8]; however, these four are basic for interpretation and will be the only ones discussed here.

The perception of movement and its use by the subject in forming a response are taken as an indication of creative mental ability[2]. It is known that intelligent adults see a relatively large proportion of humanlike action, such as the man bowing in card III and the clowns playing pattycake in card II. Less mature individuals see relatively more animals in action, such as dogs doing a trick in card II and the climbing animals in card VIII. Kinesthetic or movement responses are also allied to introspection. The absence of movement-determined responses occurs in young children, in feebleminded and deteriorated individuals and in psychoneurotics.

Form is, of course, the determinant most frequently used. For instance, a subject usually interprets the blot in card V as a bat because its shape suggests a bat. The proportion of form has many levels. For example, to call blot I a tree because lateral projections are limbs is perception on a low level, while to call it a Hallowe'en mask is on a higher level. However, the exclusive use of form and the restriction and neglect of other determinants is either a sign of a neurosis or of a very low intelligence. A high percentage of answers involving form is encountered in subjects with severe neurosis and in those with very limited mental perception—in the former because repression does not allow expression of anything besides more or less impersonal determinants of forms, in the latter because defectives do not have the capacity to use other determinants. Other factors, of course, such as the form level, are taken into account in making a differential diagnosis.

Color and shading responses are related to affectivity and emotion[6]. The theory for this is an intriguing study but lies beyond the scope of this paper. Nevertheless, let us note a few empirical clinical findings in this connection. A manic, or an extrovert, with an outgoing emotional tendency is more likely to wear brightly colored clothes than one who is depressed or has a retiring, introvertive tendency. Mourning usually is accompanied by what we call

"sombre" black clothing. Language itself makes use of color to express different emotional states. We may say that we are "blue" or use the expression, "I saw red". There are countless other examples of this sort which the reader will quickly call to mind.

Rorschach's work bears out this clinical experience. Color-determined responses of the subject are indeed an index of emotional life and emotional control. Depressed manics do not use bright colors. Those whose emotions are loosely controlled, such as excited manics, have many color-determined responses[10]. Finally, the relation of color to affectivity is demonstrated in a Rorschach phenomenon known as the "color shock". Color shock is manifested by an increase in the reaction time to the color cards while the reaction time for the achromatic cards is relatively short[6]. In extreme cases it may be manifested by the refusal of the subject to interpret the color cards or even to touch them. Color shock is a Rorschach sign of psychoneurosis and its occurrence in a record is nearly pathognomonic of repression. This discovery is certainly an intriguing topic and deserves a more detailed account. We have gone as far as we can in a paper devoted to description only.

The administration of the test is extremely simple. Any intelligent adult can give it properly after reading the directions. A skillful inquiry and proper scoring, however, require thorough study and considerable experience. A course of instruction from a well-trained worker usually is necessary before a person can undertake the correct scoring of a record. Finally, interpretation, except the most fundamental and that of very simple records, is a matter for experts only. If a Rorschach record which has been well made is sent to a skilled worker or to several skilled independent workers, all will give basically the same interpretation. This method of "blind diagnosis" is frequently employed by those in the field and is one of the best validations of the procedure.

In a recent comparison with the popular Bernreuter scale[12] (usually acknowledged by psychologists to be one of the best of the several questionnaire technics in the field of personality testing), the Rorschach technic was found to be far less susceptible to variation because of the subject's conscious attempts at distortion. This tends to confirm what many Rorschach workers contend, namely, that it is nearly impossible even for persons familiar with the scoring to "malinger" or to give a false impression on the Rorschach test. Further validation along these lines may be of tremendous importance to forensic psychiatry, particularly in cases of damage claims for organic brain injury. In this connection it may be noted that Rorschach's investigative work indicates a high degree of diagnostic accuracy in subjects with organic brain disease.

Piotrowski has demonstrated that the Rorschach technic may be applied to candidates for shock therapy as a time-saving device[13]. Possibly some adaptation of the "color shock" phenomenon might enable a competent psychiatrist to detect rapidly a suspected neurosis in a candidate for the Army or the Navy under the Selective Service Act since the prevailing conditions limit psychiatric examination to an extremely short period of time. The appearance of color shock in draftees' records would at least single out subjects for more detailed study. Such studies are being undertaken by Harrower-Erickson[14] and Bigelow[15].

We cannot here discuss the many valuable applications the procedure may be put to as research tool and general psychiatric adjunct. Complete discussions of these aspects have been given by Kelley and Barrera[11], Krugman[16] and Hertz[17].

The authors realize that this exposition is incomplete. Those familiar with the technic will find that much important material has been omitted while those who are not familiar with it will doubtless still be inadequately informed. An effort has been made, however, to correct a few of the outstanding misconceptions and to indicate the nature of the test material and the methods of scoring and interpretation.

Study and use of the technic have convinced the authors that the method is not without considerable promise as a tool in clinical neuropsychiatry and that it deserves the continued interest and attention of psychiatrists.

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SINUSES*

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There are four air spaces connecting with the nose on each side of the nasal septum—the maxillary sinus, the sphenoid sinus, the frontal sinus and the ethmoid cells, the latter being four or more in number. These cavities are lined with mucous membrane, whch is a direct extension of the mucous membrane of the interior of the nose. This membrane is covered with ciliated epithelium; the cavities normally are filled with air. An interesting thing about these spaces is that each of them has a direct communication with the interior of the nose. Two of them have direct downward openings, or ducts, allowing ingress of air, and, by gravity, drainage of their secretions downward into the nose. Two of these have not this natural drainage.

First shall be considered the largest and most important of them—the maxillary sinus—since it is the one which is the most easily and oftenest infected. The maxillary sinus is situated in the superior maxillary bone. The roof of the mouth is its floor; its roof is the floor of the orbit; its medial wall is the lateral wall of the nose, with its attached turbinal bodies; the lateral boundary is the outer plate of the superior maxillary bone with a small part of the inner aspect of the molar bone. The cavity of the maxillary sinus varies much in size and shape. The ostium of this sinus is situated far above its floor—just as that window there is above the floor of this room. Thus can be seen that drainage is uphill. Owing to the large area of this cavity, the ease with which infected material may enter the sinus, the great extent of its lining mucous membrane, and its disadvantageous uphill exit for drainage, it can readily be appreciated why this sinus is the one of all the others most frequently infected, and its consequent tendency of so often passing into a chronic stage of infection.

The sphenoid sinus occupies a part, or most all of the body of the sphenoid bone. It possesses the same handicap which the maxillary sinus has regarding drainage; that is, its outlet is on a higher level than its floor. However, the sphenoid is farthest back in the nose and is not subjected to near so many opportunities of inviting infection. Consequently, infection of the sphenoid is rare as compared with its large and distant neighbor.

The ethmoids are small cells occupying the roof of the nasal cavity and draining directly downward into the nose. More frequently perhaps than otherwise involvement of the other sinuses includes also the ethmoid cells, especially those situated anteriorly.

The frontal sinus occupies a space of varying size and shape in the frontal bone, whose anterior wall is the thick outer plate of the frontal bone,

*Read before the Tazewell County Medical Society, September, 1941.

under and above the eyebrow. The posterior wall is a thin hard plate covering a part of the anterior portion of the frontal lobe of the brain; its medial wall is the separating septum between the two frontal sinuses. Its floor is, or should be if no anomaly exists, the roof of the orbit. Near the septum inferiorly is the upper end of the narrow frontonasal duct which leads downward into the cavity of the nose, emerging in the middle fossa, below the middle turbinal body and above the inferior turbinal body.

Now, let us consider some of the phases of sinus infections.

Etiology.—Almost without exception, infection of these sinuses is the result of a cold—which is accompanied by a bacterial infection of the nasal mucous membrane and, if not promptly controlled, the infection, by continuity or otherwise, passes into these adjacent air cavities.

Symptoms and Signs.—These vary very much in different individuals. One important sign is the discharge of mucous or purulent matter in varying quantities—forward, or backward, or both. Often the source of this discharge may be seen through the nasal speculum or with the naso-pharngoscope. Another sign which often leads to the diagnosis of sinus disease, noted often even by the nurse in the office, is the frequent characteristic dampening of the resonance of voice. Pain is usually experienced by the patient, or it may be entirely absent. Often, when only the maxillary sinus is involved, considerable pain over the frontal sinus is the complaint. Of course, it is not meant to overlook the value of transillumination and x-ray plates, which usually coincide. However, they may be absolutely contradictory to each other. Just what the patient tells the examiner about the signs and symptoms should bear a great deal of weight. Because x-ray, transillumination and other means of investigation are negative from time to time, the opening and irrigating of the offending sinus nevertheless frequently yield large quantities of acute offending pus, greatly to the relief of the distressed patient.

Cough as a sign and symptom of sinus disease has purposely been omitted for the last, for it is all too frequent that a coughing patient can not believe his intractable annoying cough, whether productive or otherwise, can possibly be other than tuberculosis. These patients should be examined by a competent internist, who will in time refer them to a roentgenologist. If these two, the one with the stethoscope, the other with the x-ray, fail to find the cough cause, they immediately suspect and suggest sinus infection. Many times there is where the offense exists—and all men who have been doing work of this kind gladly bear testimony to the often spectacular results of the proper eradication of the primary sinus infection.

Now, when a diagnosis of sinusitis has been arrived at, what should be the procedure? *That which shall be said from here on is the reason for this effort.* Reverting to the openings into these air spaces, except for the ostium, or ostia in the middle fossa into the large maxillary sinus, all of them are very small and may easily be closed by an inflammatory swelling; and, indeed, this may also be the case with the maxillary sinus's natural opening or openings, as the case may be, thereby sealing infection within their walls. It might be well, if the symptoms are not too severe, to try for a few times to establish drainage by shrinkage of the swollen membranes, suction, and the application of depleting tampons. However, this all too often fails. It has been observed through the years that an accumulation of pus in any other approachable part of the human body should be, and is, evacuated; just why, so often, the nose and throat man is confronted with the gracious, unintelligent information on the part of the patient "don't open my sinus". In reply to the question "why", the invariable answer comes "because, if a sinus is once opened, it must be continued throughout life". *This is not true.* The higher up in society one goes the greater becomes evident this misinformation. These society and church women at their gatherings, around card tables and in their church circles, receive much comfort and unintelligent information discussing and talking, with great enjoyment and to them much superior knowledge, about sinus and other surgical diseases about which they know absolutely nothing. There will likely be no disagreement amongst the nose and throat men present to the observation that the higher up in society one's sinus practice goes, the more gratuitous misinformation is received as to what shall be—usually shall not be—done. It is a rare thing that one who comes from the humbler class of citizens questions what shall be done in the management of sinus disease. The laity must not altogether be blamed for this attitude against opening and irrigating sinuses. It is an amazing thing to note the vast number of intelligent doctors and surgeons who have the belief that once a sinus, always

a sinus, especially if it has been opened and drained, and they convey this gross misinformation to their patients. Again, let it be repeated that *this is not true*. Every man doing nose and throat work will testify that he has irrigated literally hundreds of infected sinuses one, or a few times, and that over periods of ten, twenty or more years they have never had further trouble. Let it be confessed that occasionally a patient clears up for several months, and then returns with the same symptoms, when the sinus must again be irrigated. One such individual is in mind who has had her maxillary sinuses irrigated from one to three times a year for several years. In extenuation of this let it be said that, while not proven, it is probable that this young woman is allergic to something which gives the symptoms; however, she is invariably relieved by irrigation.

It is unlikely there will be disagreement amongst those doing sinus work, if it were possible to properly treat, i.e., drain all acute sinus infections, that any of them would ever pass over into the chronic stage. As has been said, the maxillary sinus is the greatest offender of all, and if it were possible to make and keep open a large opening into it underneath the inferior turbinate, all of them would be permanently cured.

SELECTIVE SERVICE AS APPLIED TO THE CITY OF NORFOLK*

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When the Selective Service Act went into effect in October, 1940, five local boards were set up in the City. A physician was requested to serve on each board. Dr. A. A. Burke was appointed to board number one; Dr. A. G. Horton to board number two; Dr. C. L. Harrell to board number three; Dr. C. C. Smith to board number four, and Dr. N. G. Wilson to board number five.

In accepting these positions not one of us had the faintest idea what would be expected of us and from the correspondence I had with headquarters in Richmond the first few weeks, I do not think they did either.

TABLE 1

	White	Colored	Total
Draftees examined by Local Boards	1511	970	2481
Draftees rejected by Local Boards	644	533	1177
Percentage of rejections by Local Boards	42.62%	54.93%	47.44%
Draftees sent to Induction Board	443	229	673
Draftees rejected by Induction Board	50	56	106
Percentage of rejection by Induction Board			15.68%
Total percentage of rejections by Local Boards and Induction Board			51.71%
Transfer from other boards examined by Local Boards	404	140	544
Total examinations by Local Boards			3,025

*Read at the annual meeting of the Medical Society of Virginia at Virginia Beach, October 6-8, 1941.

Dr. Wilson and I had served in a similar capacity during World War number one. We talked things over and decided to call the group together and map out a plan as to how and where we should work.

The writer was elected chairman and was instructed to secure a place to work and make all necessary arrangements. At the first meeting of the examining board we decided to work together in a group or clinic instead of each member examining his men individually, as suggested in Richmond. We believed that by working in a group each physician doing the same thing all of the time, the work would be easier, speedier and more efficient. I think it has worked out as anticipated.

The clinic rooms of the Norfolk General Hospital were secured as a place to do the examining, working two nights a week, Wednesday and Thursday. The five physicians that headed up each board were expected to be on hand each night, with five assistants, a dentist, laboratory technician and one or two clerks to act as secretaries. We tried to get a different group of assistants each night so as to make the work as light as possible. The technicians of the Norfolk General Hospital agreed to work one night a week, collecting the blood and urine and do all urinalyses. The technicians at the City Laboratory volunteered to help one night a week and do all Wassermanns.

When we began the examinations the final setup

was as follows: a dentist, a nose and throat man, laboratory technician, orthopedist, a surgeon, one man with an assistant to do the weighing and measuring and three medical men.

When this plan was submitted to Colonel Trice, in Richmond, he did not think it at all necessary; we did not need a dentist nor so many assistants. However, we proceeded to work as outlined and after about two months of wrangling by correspondence and over the phone, our clinic plan was accepted and all of the assistants requested were appointed.

TABLE 2

The causes for rejections by the Local Boards are as follows:

	White	Colored	Total
1. Syphilis	28	213	241
2. Teeth	151	45	196
3. Vision	85	37	122
4. Heart disease*	72	53	125
5. Tuberculosis	14	1	15
6. Hernia	33	17	50
7. Mental	24	32	56
8. Hearing	26	3	29
9. Asthma	12	1	13
10. Diabetes	3	1	4
11. Epilepsy	8	0	8
12. Ulcer of stomach	8	3	11
13. Varicose veins	11	3	14
14. Orthopedic impairments	52	27	79
15. Pilonidal cyst	2	0	2
16. Sinusitis	3	2	5
17. Moral	3	6	9
18. Hemorrhoids	2	3	5
19. Syringomyelia	0	1	1
20. Tonsils	2	0	2
21. Hyperthyroidism	2	0	2
22. Psychoneurosis	2	0	2
23. Height	0	1	1
24. Genitalia	11	1	12
25. Gonorrhea	3	11	14
26. Weight† (over and under)	22	7	29

*Organic heart disease and hypertension combined.
†Over-weight and under-weight combined.

The quota assigned to the City of Norfolk was 436 men. This number seemed small, and we thought we would complete all examinations in about two months. None of us had any idea that approximately 50 per cent of those who had come up for examination would be rejected for physical defects. In May, 1941, the quota was raised to 1,185.

In the beginning we attempted to examine twenty men each night; then we increased to thirty—or sixty men a week. The first of January, 1941, the local boards began to call for more men. With the large percentage of rejections they were unable to fill their monthly quota, so we increased to forty and finally to fifty men a night, the highest being fifty-five for any one night. This proved to be too much of a burden, it was too much to ask of a doctor, after he had worked hard all day, to report to the clinic at seven o'clock and work steadily until ten or ten-thirty o'clock. The men were hard to handle in this large number; they got restless, irritable and very noisy while waiting. We decided we had to have more assistance, or work four nights a week. We requested the defense committee of the Norfolk County Medical Society, headed by Dr. Julian Rawls, to help us out. He suggested that we divide the boards and organize another group to work at St. Vincent's Hospital.

In May board number one, headed by Dr. Burke, and board number four, headed by Dr. Smith, began to work in the clinic rooms of St. Vincent's Hospital,

TABLE 3

Causes for rejection by Induction Board:

	White	Colored	Total
1. Rhonchitis	1	0	1
2. Chancroid	0	2	2
3. Mental	8	8	16
4. Under-weight	2	0	2
5. Teeth	4	2	6
6. Tuberculosis	4	1	5
7. Orthopedic impairments	2	3	5
8. Gonorrhea	3	16	19
9. Psychoneurosis	7	2	9
10. Syphilis	0	1	1
11. Hernia	3	2	5
12. Vision	6	3	9
13. Heart	0	1	1
14. Sinusitis	2	0	2
15. Hearing	1	0	1
16. Epilepsy	1	0	1
17. Alien	1	0	1
18. Illiteracy	1	9	10
19. Encephalitis	0	1	1
20. Albuminuria	0	1	1
21. Hypertension	0	2	2
22. Pleurisy	0	1	1
23. Moral	1	1	2
24. Dementia precox	1	0	1
25. Chronic alcoholism	1	0	1

with a similar setup as we had at Norfolk General Hospital. These two boards drew men from that part of the city nearest to St. Vincent's. With this arrangement we were able to assign thirty men a night to each group, making 120 examinations a week. The technicians from St. Vincent's Laboratory worked one night and the City Laboratory the other.

In June a group of colored physicians, headed by Dr. Hamilton Francis, was organized to work at the Norfolk Community Hospital. They examined from twelve to fifteen colored men a week. With this setup the work is fairly evenly distributed among most of the doctors and very satisfactory, and I believe as efficiently done as anywhere in the State.

TABLE 4

Percentage of rejections of the four leading diseases by the Local Boards:

	White	Colored
Syphilis	28–1.8%	213–21.95%
Teeth	151–9.9%	45– 4.6%
Vision	85–5.6%	37– 3.7%
Heart disease	72–4.7%	53– 5.4%

Another thing that added to our burden was the number of out-of-town people on defense projects in this area. We estimated that at least 25 per cent of the men coming up for examination were referred by boards from other cities and states all over the Union.

In the beginning we had a number of men coming up for examination under the influence of alcohol. These men were quite noisy and rowdy, and their hearts were racing so fast that we found it almost impossible to render a fair opinion. We suggested to each local board that a notice be printed on each card sent out to the draftees to drink no alcohol for at least twenty-four hours before presenting themselves for examination. This produced wonderful results.

The name given our new army, "Selectees", I think is most appropriate, for they are taking the very "Cream of the Nation", both physically and mentally.

In the World War draft, according to Britten and Perrott, 31.2 per cent were classified as unfit for general military service, while 52 per cent were recorded as having one or more physical defects. They also estimated that about 43 per cent under the Selective Service Act are being found unfit for general military service. We believe that in the final analysis the percentages of rejections will be much higher.

One might ask, why such a difference? Four reasons might be given for a larger percentage of rejections now than formerly. In the World War draft men were called between the ages of 21 to 31, while in the Selective Service Act the age limit is 21 to 35, thus allowing four more years for defects to develop. (In July the age limit was dropped to 28.) Second, more time is being given to get the men ready for camp, and a more careful physical examination is being made than formerly. Third, there is improved diagnostic technique and more rigid requirements are made. Fourth, no test for venereal disease was required in the World War draft, while under the present Selective Service Act a Wassermann test is required on every Selectee and a smear or culture for gonorrhea on all suspected cases. If found positive they are put in Class 1B, or limited military service, and may never be called.

In the City of Norfolk at the end of July, the five local boards had examined 2,481 men, 1,511 white and 970 colored. We also examined 544 transfers from boards out of town, making a total of 3,025.

The number rejected by the local boards was 1,177, or 47.44 per cent. This does not include the transfers.

At the end of July 673 draftees had been sent to the induction board in Richmond, 443 white and 229 colored. Of this number 106 were rejected, or 15.68 per cent, making a total percentage of rejections from Norfolk 51.71 per cent.

Of the causes for rejections, syphilis heads the list, with 28 or 1.8 per cent white, 213 or 21.95 colored. Teeth came next with 151, or 9.9 per cent, white, and 45, or 4.6 per cent, colored. Vision came third with 85, or 5.6 per cent, white, and 37, or 3.7 per cent, colored. Heart diseases, including hypertension, came fourth with 72, or 4.7 per cent, white, and 53, or 5.4 per cent, colored. I was very much surprised in the small number of rejections for tuberculosis, 1.19 per cent (18 white cases and one colored). This included both the local and induction boards' rejections; over half of these cases had been previously diagnosed and were under treatment.

The number 1,177 includes those put in Class 4F, and disqualified for any form of military service, and those put in Class 1B, or limited military service. A large number of the latter group could be treated and prepared for regular service. Why should those with reparable hernia be excused from service, or the ones with well-fitted artificial teeth or other minor defective teeth that are otherwise physically fit be deferred? Many of us think that the ones with venereal disease should be treated until they have passed the contagious stage, then be inducted into service. It just is not fair to those that have been called.

I admit that 2,481 men is a small group to analyze as compared with the large number being drafted, but it gives us a fair idea of the percentage of our young men that are defective. I think it is a shame and a disgrace to a civilized and cultured nation, and should be deplored. The problem of defectiveness in our youth should be given careful study by our health authorities, and an effort be made to correct them if possible.

In conclusion, I wish to thank the members of our profession and the dental profession who so kindly gave of their time in making these examinations; also the technicians of the laboratories of the Norfolk General Hospital, St. Vincent's Hospital, and the City Laboratory for their generous help, as also the members of the High Y Club of Maury High School for their clerical assistance and the personnel of the local boards for furnishing the necessary data in working up this paper. I wish to thank especially Ralph Winston, son of the late Dr. John W. Winston, who has given so freely of his time, having missed only one or two nights since we began to work last fall.

We think the clinic or group plan of making examinations the quickest and most efficient method, and we have done the work willingly and gladly, but I for one think it entirely too big a task for the federal government to ask of the medical profession free of charge, especially since such tremendous sums are being wasted and squandered on defense projects. Some plan should have been made to pay the doctors for this work.

REFERENCE

Public Health Reports, January and May, 1941, by Rollo H. Britten and George St. J. Perrott.

DISCUSSION

DR. N. G. WILSON, Norfolk: I want to say in the beginning I think it is the consensus of all those who have been engaged in this work in association with Dr. Harrell that the clinic method of examining draftees is by far the most advantageous, giving to each man special knowledge by specialists. We are all agreed that it has certainly been very helpful to us.

The facts presented by Dr. Harrell are startling. After deducting the 18 to 20 per cent of draftees deferred because of remediable disabilities, such as hernias, insufficient teeth, syphilis, and gonorrhea, there still remain approximately 50 per cent of our young men who, according to the requirements of the induction manual, are totally unfit for military service. In comparing the work of the present selective service with that of the first World War, it is notable that at this time every aid to diagnosis is permitted, such as blood work, gastric analysis, electrocardiagrams, x-ray examinations of the chest, gastro-intestinal and genito-urinary tracts—in fact, any thing that helps in determining the fitness or unfitness of a man for military service. Even when these have been done, a considerable percentage of men classified by examiners for the local boards in A-1, for various reasons, is rejected by the induction board. These precautionary measures will easily be understood when we recall the experience during and after the first World War, especially with tuberculosis and mental diseases.

Considering the disabilities encountered, I think it pertinent to ask, "What could the medical profession have done to reduce their incidence?" Most of us will concede that hernias, pilonidal cysts, most of the defects of vision, undescended testicles, and blood dyscrasias are hardly preventable. As you have been told by Dr. Harrell, very few cases of parenchymal tuberculosis have been determined, and most of these have been under treatment at the time of examination. Not until there have been provided greater facilities for segregating the active cases, and for the exercise of police power over them, can we hope to reduce the present incidence of this disase.

Disease of the cardio-vascular system is tragically frequent. In the group of approximately 600 men examined by Board No. 5, 7.7 per cent were rejected for this cause. The rheumatic and hypertensive types were about equally represented. We cannot escape the feeling that many of these followed obscure infections or those to which the laity attach so little importance, such as "sore throat" and "chronic catarrh", with streptococcic sinus involvement, and all the various infectious diseases of children which it is thought they *must* have. How can the pediatricians prevent heart disease if they do not see the patient until after it is established?

In the group of men referred to, 10 per cent were either rejected or deferred because of insufficient teeth. I think this is a subject for profound study. Even in the favored group, who at birth are put into the tender care of a pediatrician—who are nursed for the extended period of two to five weeks, then fed most scientifically, and most persistently given cod liver oil, calcium, sun baths, and everything that would seem to promise normal development of the teeth—all too often these children exhibit mal-occlusion and caries. On the other hand, under-fed colored children are found with well-formed teeth of good texture, and beautifully spaced. Is it possible that resumption of the time-honored, but almost extinct, custom of nursing babies for ten or more months might have a helpful influence on the development of teeth?

After much thought about the question, I am convinced that the greater part of all the disabilities encountered are *not* due to failure on the part of the profession to *provide* service for the people, but failure on the part of the people to *seek* it.

DR. WILLIAM B. PORTER, Richmond: I should like to comment on one aspect of what I feel to be a serious

problem. One must be impressed with the large number of young men who are being rejected for military service on account of what has been diagnosed as cardiovascular disease.

During the last war it was my privilege to be in charge of a special board which functioned in the reclassification of soldiers, as it concerned specifically the cardiovascular apparatus. I also served for many months with the cardiovascular section of the British Army. Since the last war I have reviewed a large number of soldiers discharged from the army with supposed cardiovascular disease. It is my conviction from these experiences that a considerable, if not a major, percentage of both those rejected for military service and those who are discharged with supposed cardiovascular disease are suffering from functional abnormalities of the circulatory systems. These men are perfectly fit for military duty, and I think it is pathetic that so many are being classified as physically unfit to serve their country. It would seem most appropriate that those entrusted with the medical examinations in draft boards should review an article published in 1919 by Sir Thomas Lewis in the *British Medical Journal* under the title of "Cardinal Factors in the Diagnosis of Organic Cardiovascular Disease".

DR. HARRELL, closing the discussion: I wish to thank Dr. Wilson and Dr. Porter for their remarks.

In reply to Dr. Porter's statement, I wish to say that of some 2,400 men examined only 72 were turned down for organic heart disease and hypertension. At least two physicians pass on those thought to have organic heart disease; if they agree, they are disqualified. In case of hypertension with rapid pulse they are referred to the advisory board. We think that in many instances a nervous element plays a part in these cases.

UNILATERAL TWIN ECTOPIC PREGNANCY

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In reviewing the literature, I find that unilateral twin ectopic pregnancy is a comparatively rare condition. Flemming and Talisman[1] were able to find sixty-nine instances reported in the literature. Since that time Anderson[2] in 1939 reported a case and Smith[3] in 1941 also reported one, bringing the total to seventy-one cases. The following is a case which was admitted to Lakeview Hospital.

M. R., a colored female, age 29, was admitted to the hospital April 24, 1941, with chief complaint of abdominal pain and vaginal bleeding. She gave a history of having had her last menstrual period on February 12, 1941, which was normal. On April 2, 1941, she began having rather severe pain in the upper abdomen, especially on the left side. She was seen by a physician who gave her a hypodermic to relieve her pain. On the next day, patient began passing dark blood from the vagina, which continued up until admission and on several occasions she passed several small clots. She continued to have some abdominal pain and about one week before admission pain became cramp-like in nature. On April 23, 1941, she was advised by a physician that she had a tumor of the womb and perhaps miscarriage; therefore she was referred to the hospital.

Past Ob. history was negative.

Physical Examination: Patient, a colored female, age 29, well developed and nourished, lying quietly in bed. Temperature 99.6°, pulse 80, respiration 20, blood pressure 120/60. Physical examination was essentially negative with the exception of a hard, firm, irregular, tender mass about the size of a grapefruit, arising from the pelvis. There was marked tenderness in the upper left abdomen. Vaginal examinations revealed a small amount of old blood in the vagina, cervix firm, slightly enlarged and tender. The uterus was enlarged to the size of a grapefruit and contained numerous nodules. There was also some fullness in the cul-de-sac.

Laboratory Findings: R.B.C. 3,400,000, W.B.C. 7,050, hemoglobin 61%, urinalysis negative, and Kline negative.

On the basis of these findings, a diagnosis of uterine fibroids and an early incomplete abortion was made.

Several hours after admission to hospital, patient began complaining of pain in abdomen which was relieved by morphine, gr. ¼. The next morning she had an attack of severe abdominal pain associated with nausea and vomiting, following which patient went into a state of shock. A blood count was repeated and she was found to have 2,800,000 R.B.C., 15,000 W.B.C., and 35% hemoglobin. Due to the sudden drop in her hemoglobin and her pain, a diagnosis of ectopic pregnancy was made. An immediate laparotomy, under ether anesthesia, was done, during which she was given 500 cc. of whole citrated blood.

Operative Findings: On opening the abdominal cavity, through a low mid-line incision, there was found about 800 cc. of blood in peritoneal cavity. The uterus was found to be enlarged to the size of a cocoanut and to contain fibroid nodules. The left tube was about six inches long and the distal end enlarged to the size of a lemon and was bleeding rather profusely. The distal end of the tube was found high in the left upper quadrant. The left ovary was slightly enlarged and right ovary and tube were bound down in the cul-de-sac. A left salpingectomy was done.

Pathological Examination: Showed a mass 7 cm. in length and 3 cm. in width, in distal end of left tube. The mass was opened and found to contain a single amnionic sac containing two feti, each measuring 25 mm. from crown to rump. Microscopical examination was not done.

Following operation, patient had a normal convalescence and was discharged from the hospital on the fourteenth day in good condition. She was advised to return later for hysterectomy.

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DACRYOLITHIASIS WITH STRICTURE OF THE LACHRYMAL DUCTS

A Case Report

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Dacryolithiasis involving the upper portion of the lachrymal sac and the superior canaliculus is of rare occurrence, especially when the stones are numerous. In cases of persistent epiphora with remittent inflammatory exacerbations of the upper portion of the excretory part of the lachrymal apparatus it should be considered as a possible etiological factor, as misconception as to the underlying pathology in this condition will result in failure to secure a satisfactory outcome, as the case reported below well demonstrates.

Among the reported cases in which concretions, mainly of fungus origin, have been removed from the excretory portion of the lachrymal apparatus are those by Schroeder in 1894; Wissman in 1913, who found a yellowish granular mass in the upper canaliculus; G. Maxted, in 1915, had a female patient, 68 years of age, who for several years had had pain, discharge and epiphora in the left eye without dilation of the sac, in whom, for the last few months, the condition was purulent, and concretions were discovered in both canaliculi; Wilhelm Gruter, in 1933, reported a case in which the mass from the lachrymal duct was the mycelium of a fungus; W. S. Reese, in 1935, commented on a foreign substance about one-half the size of the lens, waxy in appearance from the lachrymal canal in a woman 52 years old; and Levi reported the case of a patient in whom the deposits proved to be of a concentric chalky nature.

R. P., white, 16 years of age, clerk in a mercantile establishment, was seen for the first time on August 20, 1937. He was referred by a former patient whom I had treated for a chronic dacryocystitis. He had seen him on the street with tears streaming down his right cheek, and had inquired as to why he did not have something done about it. Over a period of about a year, ending about two months before he consulted me, he had been treated by a well-known ophthalmologist (now deceased) and his associate, and as he saw no improvement, he had become discouraged and felt that he would have to continue to bear his affliction. He had constant epiphora in the right eye, and at times at the inner canthus it would become red, swollen and inflamed, and a purulent discharge would appear. This state of affairs had continued for several years. The upper punctum appeared normal. The lower one was elevated and everted, providing the necessity for slitting the canaliculus on its posterior aspect for about two mm. to establish contact with the lachrymal secretion—thus restoring the needed capillary traction to carry off the tears. An obstruction was found at the junction of the sac and the lachrymal duct. I was able to pass a No. two probe through it. Seeing him every two to three days, I

gradually dilated the stricture until a No. four was used with ease on August 27, followed by a No. seven on September 17. On September 29 he came in with an acute swelling of the upper part of the sac and of the superior canaliculus and with frank pus exuding from both puncta. Enlarging the upper one to provide better drainage, I felt the point of the knife run against something of stone-like consistency—which was verified by probing. The slit in the canaliculus was enlarged slightly and by use of a small spoon I removed eleven small calcareous stones about the size of particles of medium sand. As on several occasions when passing a probe through the lower canaliculus I had experienced the sensation as if it might have run against something of stone-like consistency—although without interfering with the passing of the instrument—I investigated further and removed five more of the calcareous deposits from the upper portion of the sac. Prompt healing resulted, and by January 1st I was able to pass a No. nine probe. The same treatment was continued at longer intervals to prevent contraction. In February, 1938, he complained about epiphora in the left eye and I found a similar stenosis at the junction of the sac and the duct. Successful probing with dilatation was carried out as had been done with the right duct. After reaching a No. nine probe in June, 1938, he continued to come at monthly intervals on his own initiative until January, 1940, and in each instance the ducts were patent with no epiphora. He was last seen in May, 1941, when he came to consult about a conjunctivitis and for refraction. He had continued free from the epiphora and the ducts remained patent.

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PERFORATED DIVERTICULITIS OF THE SIGMOID WITH TWO CASE REPORTS*

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INTRODUCTION

The development of diverticula of the large intestines usually occurs distal to the splenic flexure, the sigmoid flexure, the most frequent location, being involved from seventy to eighty per cent of cases.

In this presentation of diverticula, the large intestinal variety is considered, which is spoken of as the acquired form, and is thought to be the result of an inherent weakening of the muscular layers of the intestinal coat with herniation and saccular pouching. This type of diverticulum should not be confused with that of Meckel, as first described in 1815, which has a definite etiological basis, and is the persistence of the vitello-intestinal duct which was the communication between the mid-gut and yolk sac during the first few weeks of fetal life. It arises from a portion of the ileum about twenty inches proximal to the ileo-cecal valve.

CASE REPORTS

Case 1.—A 77-year-old Italian male was perfectly well until seven hours before admission when he was seized with a terrifically sharp pain around the umbilical region while defecating. The pain was so severe that it caused him to double up and he was unable to walk following the onset. The pain was accompanied by nausea and vomiting and remained in the umbilical region. The past history was non-contributory.

Examination revealed an acutely ill white male; T-103, P-124, R-28, B.P. 110/70. The abdomen was fairly obese and distended. There was tenderness over the entire abdomen with marked rebound tenderness and some rigidity in the lower quadrants. Other physical findings essentially negative.

Laboratory Findings: Hbg. 72 per cent, W.B.C. 7,080, Polys 77 per cent, lymphocytes 23 per cent. Urinalysis was essentially negative.

*From the third Surgical Service, Coney Island Hospital, Division of New York Department of Hospitals. Presented before the monthly surgical conference, May, 1941.

†Resident in Surgery, Coney Island Hospital. Now in U. S. Army, at Station Hospital, Fort Monroe, Va.

X-ray Findings: Chest—Heart slightly enlarged; lungs showed pleural thickening and bronchitic changes. Abdomen, no evidence of free intra-peritoneal air; possibly some free intra-peritoneal fluid.

The impression was that of a fulminating peritonitis from a ruptured hollow viscus. Following intravenous fluids and blood typing, a laparotomy was performed two hours after admission.

Under 150 mgms. (Novocaine) spinal anesthesia, exploratory laparotomy, through a mid-right rectus incision revealed the omentum in the pelvic region, with induration and a purulent exudate. The peritoneal cavity contained approximately 1500 c. c. of purulent material mixed with fecal matter. There was more induration and exudate in the sigmoid region. The appendix appeared normal and no perforations were noted. Two Penrose drains were inserted, and 10 gms. sulfanilamide placed in the peritoneal cavity. In spite of stimulants and transfusion the patient's condition became worse and he expired just as the skin was being closed.

Sigmoid specimen with perforations in Case 1.

A culture of the abdominal material showed B. coli communis and anaerobic gram positive bacilli.

Pathological report showed two perforations in the sigmoid 1 cm. apart 14 cm. from the anus. The external area of the perforations was covered by a thick suppurative exudate. The vessels of the sigmoid were intensely engorged. There were multiple small diverticulae, the largest of which measured 3 cm. in length. The rectum showed no evidence of neoplasia or ulceration. Microscopic sections of the sigmoid showed several out-pocketings of the mucosa completely lined by columnar epithelium with tubular glands lined with mucous-secreting cells. Throughout the wall there was marked edema with areas of lymphangitis together with foci of polymorphonuclear leucocytic infiltration. In several areas there was considerable necrosis of the sigmoid wall. The pathological diagnosis was: perforated diverticulitis of the sigmoid with diffuse suppurative peritonitis.

Case 2.—A 48-year-old Hungarian Jewish male was admitted to the hospital complaining of cramp-like abdominal pain of five days' duration, with increase in severity several hours following a dose of magnesium sulphate taken the morning of admission. The pain first began in the left lower quadrant and radiated across the lower abdomen. The pain was accompanied by several loose stools without blood following the taking of magnesium sulphate. There was no nausea or vomiting. Further history revealed the patient had a similar mild attack eight months prior to present admission and the patient was discharged after ten days with report of a normal barium enema; the admission diagnosis, however, was subacute diverticulitis of the sigmoid.

Examination on the second admission presented an acutely ill male; T-102, P-110, R-24, B.P. 105/70. The abdomen was moderately distended in the lower third, markedly tender with rigidity and spasm more pronounced in the left lower quadrant. Rectal examination was negative.

Laboratory Findings: Urinalysis negative, R.B.C. 4,600,000, Hbg. 88 per cent, W.B.C. 30,000, Polys 97 per cent, Lymphocytes 3 per cent.

The impression was that of a diffuse peritonitis following perforated diverticulitis of sigmoid.

Intravenous fluids were administered and a laparotomy was performed under 150 mgms. (Novocaine) spinal anesthesia through a lower mid-line incision. An exudative gangrenous lesion was present in the region of the sigmoid and approximately 300 c. c. of fetid purulent material was present in the pelvis culture of which showed B. coli communis. The purulent material was aspirated, two Penrose drains inserted, and 10 grams of sulfanilamide introduced into the peritoneal cavity.

Post-operative treatment consisted of Wagensteen suction, oxygen tent, intravenous fluids, multiple small transfusions, neoprontosil intramuscularly, morphine and prostigmin. The patient had a very stormy course and drained profusedly through the abdominal drains. The temperature became normal on the twentieth post-operative day. With a slight draining sinus the patient was up and about in the ward thereafter until he was discharged as

recovered on the fifty-sixth post-operative day. A barium enema during convalescence showed spasm and accentuation of the haustral markings in the sigmoid and was reported as sigmoiditis.

CONCLUSION

The sulfanilamide used intra-peritoneally, I believe, was of great aid in the patient's recovery; however, there was no proof of this, but from its use in other forms of peritonitis (ruptured appendix, perforated ulcer), in which the virulence of the organism is not as great, it has been proven by statistics that it is of value.

The two cases being admitted within two months of each other enabled a diagnosis of perforated diverticulitis to be made in the second case and therefore a more desirable incision.

The operative treatment used in these two cases consisted of aspiration and insertion of drains with the introduction of 10 grams of sulfanilamide intra-peritoneally. A proximal colostomy above the site of the perforations as practiced by some, was not done. It was very difficult to determine the exact location of the perforation because of so much induration and purulent fluid.

The barium enema during convalescence in the second case did not show any diverticula, probably because of being filled with feces, as diverticula usually contain fecal concretions.

REFERENCES

Textbook of Surgery: Christopher.
Postgraduate Surgery: Maingot.
Textbook of Surgery: DaCosta.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

A 35-year-old colored multipara with four previous pregnancies was seen by a physician for the first time when seven and one-half months pregnant. At that time she had a fast pulse and some edema of the lower extremities, although a complete examination was not done because of a "rush in the office". She was given a "mixture" with some digitalis in it, because of her "heart condition". She was advised to return after four or five days for a complete examination. She was seen by another physician one week later, with a history of having had convulsions at home for the past day or so, and she was referred to a hospital for a convulsive toxemia.

At the time of admission to the hospital she is said to have been markedly jaundiced, comatose, and with a marked suppression of urine. Soon after admission she was given one ampoule (2 cc.) of 50 per cent magnesium sulphate hypodermically, nembutal gr. 7½ per rectum, and 500 cc. of 20 per cent glucose in normal saline by venoclysis. Twelve hours after admission she was delivered spontaneously of a premature stillborn infant. Her condition postpartum continued to grow worse, she remained comatose, and died two days after delivery. Autopsy was not done. The record gives no information regarding convulsions, the blood pressure, nor the amount of urinary output. There is no record of blood chemical determinations after admission to the hospital.

COMMENT

This case is classified as a preventable obstetrical death. A 35-year-old multipara obviously with a hypertensive toxemia at seven and one-half months of the pregnancy most likely had an underlying hypertensive disease. Adequate prenatal examinations would have detected this in the first third of the pregnancy and would have indicated a termination of the pregnancy and probably an associated sterilization. The failure to obtain adequate prenatal care early in the pregnancy was due to ignorance or neglect on the part of the patient and her family.

No comment hardly seems necessary regarding the negligence of the first physician when the patient did report for examination. Obviously the patient was seriously ill at that time and should have been referred to a hospital for treatment.

The information available to the committee is deficient in some essential facts necessary for an intelligent management after admission to the hospital. If these facts were unknown to the hospital staff then it would seem that any attempt at treat-

ment would be uncertain. These facts are presence or absence of convulsions, blood pressure, CO_2 combining power, blood urea, and the urinary output. There is no record of any additional therapy after that given at the time of admission, and one member of the committee comments that it would be interesting to know how she was treated after delivery. One member comments that the use of saline was unwise. Certainly the presence or absence of acidosis could have been determined and if present corrected with molar lactate solution. The persistent comatose state would suggest its presence. Digitalization and the use of the oxygen tent may have certainly been helpful. The blood pressure levels and the occurrence of convulsions would have determined the necessity for more adequate sedation. Certainly the information before the committee rather indicates, in the words of one member of the committee, that the care from the onset of the pregnancy until death was inadequate and perhaps careless. Obviously there may have been and probably were extenuating circumstances to account for the incomplete care, but such information is not available to the committee. In summary then this 35-year-old mother of four children died because of inadequate care mainly due to her own fault, and in part probably due to incomplete care by the attending physicians.

Correspondence

What Was the Fate of Your Questionnaire?

In *The Journal of the American Medical Association* for December 27 and in the January issue of the VIRGINIA MEDICAL MONTHLY, there is a questionnaire. It is the hope of the Procurement and Assignment Service that every doctor in the United States will fill out this questionnaire and return it to Dr. Sam F. Seeley, Executive Officer, Procurement and Assignment Service, New Social Security Building, 4th and C Streets, S. W., Washington, D. C., at the earliest possible date. If more of these questionnaires are needed, they can be obtained either from Dr. Seeley's office or from Dr. Hugh H. Trout, Roanoke, Virginia.

Briefly, this questionnaire differs from the previous questionnaire sent out by the American Medical Association's Medical Preparedness Committee in the fact that it asks each doctor to state his "willingness to give his service in the Army or Navy of the United States when needed in the current emergency" and also at the same time to express his opinion of his own availability.

It is the purpose of this communication to urge every doctor in Virginia to fill out this questionnaire as it furnishes most important information as to the availability of physicians and their willingness to serve in the armed forces if they are needed.

A committee from the state medical society has made a careful and detailed study of the number and classification of physicians in the defense regions, counties, and cities of the State of Virginia. This shows the population, the total number of doctors (both white and colored), their ages, those in general practice, the specialists, those connected with institutions (medical education and essential industries), those in retirement, those in the Reserve Corps of the Army and Navy, the number of people per physician, and percentage of reserve officers in general practice.

With this information, it is the hope and belief of those in charge of the Procurement and Assignment Service that any unnecessary hardship will be prevented as far as possible in all localities throughout the State of Virginia.

Of course, we all realize that military needs of the country as regards the medical profession have the first call on our services, but at the same time, those in charge of the work are thoroughly conversant with the necessity for protecting civilian medical needs not only as a community obligation but as part of the military needs.

Certainly, the breakdown of civilian morale due to the withdrawal of too many doctors from the various communities would invite a military disaster.

By this plan working through Corps Areas, it makes the plan uniform throughout the United States.

HUGH H. TROUT, *Chairman for Virginia, Procurement and Assignment Service.*

Similarity in Past and Present.

RICHMOND, VA.,
JANUARY 27, 1942.

TO THE EDITOR:

I came across the enclosure in "*Science*" for January 16, 1942.

It seemed to be so much like the present-day attitude in many instances that it is rather startling. It all depends upon "whose ox is gored" and is some-

what reminiscent of our change of attitude toward Russia. I thought you might find it worthwhile to reproduce this in the VIRGINIA MEDICAL MONTHLY if you have the space.

Very sincerely yours,

J. SHELTON HORSLEY.

A Scientist at Peace and at War Four Hundred Years Ago

The manner in which one great scientist of the past, Nicolò Tartaglia of Brescia (*c.* 1500-1577), conducted his conscience in the face of the differing requirements of peace and war, may not be without some interest to scientists of the present day who find themselves in a similar situation.

In the "Epistola" to his "Dello Nuova Scienza," written at Venice 20 Demember 1537 (O.S.), and addressed to his Excellency the Duke of Urbino, Tartaglia writes:

When I was living in the town of Verona, Illustrious Duke, one of my intimates, my cordial friend the master of ordnance at the old castle (a man of experience and great skill in his art, and endowed with an abundance of good qualities), asked me one day my opinion how to aim a piece of artillery to give it the greatest range. Although I had no practical knowledge whatever of artillery, for in truth, Excellent Duke, I have never in my life shot a single round with firearms, arquebus, bombard or musket, nevertheless, being desirous of serving my friend, I promised shortly to give him a definite answer to his question.

Tartaglia then proceeds to give an account of his attack upon the problem set him by his friend, and then goes on to remark:

As the result of this I had the intention of writing a treatise on the art of artillery, and to bring it to a degree of perfection capable of directing fire in all circumstances, assisted only by a few particular experiments: for as Aristotle says in the seventh book of "Physica," Section 20, "particular experiments are the basis of universal science."

But, since then, one day meditating to myself, it had seemed to me that it was a thing blameworthy, shameful and barbarous, worthy of severe punishment before God and man, to wish to bring to perfection an art damageable to one's neighbour and destructive to the human race, and especially Christian men in the wars that they wage on one another. Consequently, not only did I altogether neglect the study of this matter and turned to others, but I even tore up and burnt everything which I had calculated and written on the subject, ashamed and full of remorse for the time I had spent on it, and well decided never to communicate in writing that which against my will had remained in my memory, either to please a friend or in teaching of these matters which are a grave sin and shipwreck to the soul.

In view, however, of the preparations of the Turks to invade Italy, who, as Professor J. D. Bernal has pointed out, were instigated by his Most Christian Majesty the King of France, Tartaglia suffered a change of mind. He writes:

Today, however, in the sight of the ferocious wolf preparing to set on our flock, and of our pastors united for the common defence, it does not seem to me any longer proper to hold these things hid, and I have resolved to publish them partly in writing, and partly by word of mouth, for the benefit of Christians so that all should be in a better state either to attack the common enemy or to defend themselves against him. I regret very much at the moment having given up this work, for I am certain that had I persevered I would have found things of the great value, as I hope yet to find. . . . I hope that your Lordships will not disdain to receive this work of mine so as better to instruct the artillerymen of your most illustrious government in the theory of their art, and to render them more apt in its practice.

M. F. ASHLEY MONTAGU.

Department of Anatomy,
Hahnemann Medical College and
Hospital, Philadelphia, Pa.

Miscellaneous

An Experiment in Nutrition.

Under the guidance and scrutiny of the Office of Defense Health and Welfare Services of the Federal Security Agency, headed by Paul V. McNutt, two sections of Richmond have been selected as test areas for an intensive campaign intended ultimately to improve the nutritional standards of the American people. Government workers have pointed out that Virginia was selected for this experiment of national interest because of the state's historical background, its highly cooperative volunteer service for defense and the ready availability of personnel for the experiment. Dr. I. C. Riggin, State Health Commissioner, and Dr. Millard C. Hanson, Commissioner of Health for the City of Richmond, are cooperating in this test nutrition effort and joining them are such organizations as the Medical College of Virginia, Virginia Defense Council, Federation of Woman's Clubs, Richmond Home Economics Association, Richmond Academy of Medicine, Federation of Parent Teachers Associations, Richmond Dental Society, Richmond Junior League, the citizens' League Defense Program of Office of Civilian Defense, The Dairy Council, Virginia Tuberculosis Association, Colored Recreation Association, WPA Division of Community Service Programs, Richmond Public Library, Richmond Social Service Bureau, Richmond Dietetic Association and the Farm Security Administration. A group of fifty representing these and other welfare agencies makes up the committee in charge of carrying out the experiment for the federal government.

In late March of 1941, the Richmond Nutrition Committee was organized as a section of the Virginia Nutrition Committee. The personnel of the latter was named by the U. S. Office of Defense

Health and Welfare Services. Miss Margaret Fitzhugh, director of Richmond school cafeterias, was elected chairman. She appointed recently an executive committee and named as its leader Miss Emily Bennett, director of the Dairy Council. At the time of this committee's appointment representatives of the Federal Security Agency out of the office of Dr. M. L. Wilson, assistant director in charge of nutrition, presented their plan for the Virginia nutrition experiment. The local group accepted the challenge and asked for further instructions. In January, Dr. W. H. Sebrell, Jr., in charge of field investigations of nutrition for the U. S. Public Health Service, met with members of the RNC executive committee and outlined the plan more specifically.

Miss Eleanor Enright, a regional director in the nutrition division of the Federal Security Agency, was then sent to Richmond to check the definite availability of well trained instructors for carrying out the program efficiently. Soon Mrs. Helen Montfort Moodie, expert organizer of the Federal Security Agency, arrived in Richmond and established an office in the clinic building of the Medical College. A meeting of the executive group of the local committee in Dr. Hanson's office was called, followed shortly by another meeting of the full committee in Dr. Sanger's conference room. At these meetings details of procedure were worked out and approved.

Mrs. Paul Maddox, president of the Federation of Parent Teachers Associations, is in charge of the organizational activities in the two areas of three precincts first to be tested, Barton Heights, Highland Park area and parts of Jackson Ward. There are approximately 15,000 persons in these areas. Working with her, besides Mrs. Moodie, are Mrs. Douglas E. Taylor and Mrs. Phil Kittenplan of the Federation and Dr. Z. G. Gilpin, Negro physician. To assist in the initial instruction in Dr. Gilpin's area the Federal Security Agency has sent in a Negro specialist in nutrition. In the other two sections, all instructors are volunteer workers, the idea being to have the experiment when under way fully a 100 per cent volunteer defense activity. National authorities in the practical applications of newer nutritional principles will be brought to Richmond for the mass meetings arranged whereas those attending unit meetings will be instructed by local nutritionists. As the experiment progresses, needed teachers for added units and sub-units will be selected from those who have had nutrition instruction under the civilian defense canteen project. The first big meeting was held on February 25 at Chandler Junior High School in charge of Miss Margaret Fitzhugh, RNC chairman.

Concurrently with organization and instruction in the areas selected extensive surveys will be conducted to determine changes in consumers' buying habits. One survey already completed has shown that only about 10 per cent of the children in an elementary school in Richmond are selecting or bringing from homes balanced lunches.

Some 3000 nutrition posters from the Office of Defense Health and Welfare Services are soon to be distributed city-wide to grocery stores, restaurants, hotels, schools, and other similar places by the Boy Scouts. The Richmond Public Library and the library of the Medical College of Virginia have made available for the public the latest lay and technical books on the subject. Soon there will be established, probably at the Valentine Museum, exhibits of interest to school children and adults on the importance of one's wisely taking care of his "hidden hunger" as well as his "hollow hunger," lack of attention to the former, according to some authorities, being one of the indirect causes for such a large proportion of physically unfit found under Selective Service. Consequently the ultimate object of the experiment in Virginia is to bring the newer knowledge of nutrition out of text books and pamphlets right into the homes and on to the tables of the American people, emphasis beng placed upon low cost diets and plentiful foodstuffs with vitamin concentrates out of the picture, the latter being in the province of physicians. The progress of this test will be reported from time to time by the press, both locally and nationally.

SIDNEY S. NEGUS, PH.D.

New York Polyclinic Honors 23 of Its Doctors.

The twenty-three physicians and surgeons deemed to have contributed most toward the creation of Polyclinic Hospital were honored on February 10, when their portraits were unveiled in the faculty room of the hospital, 341 West Fiftieth Street, New York City.

Several hundred staff members, nurses, visiting physicians and other friends of the hospital attended the ceremony or viewed the gallery during the after-

noon. A reception and tea followed the unveiling.

Mrs. Victor Harris, chairman of the board of the Social Service Auxiliary of the hospital, officiated at the unveiling of the gallery. The presentation of the portraits to the hospital was by Dr. Orrin S. Wightman, former president of the New York State Medical Society and the New York County Medical Society. A. A. Jaller, executive officer of the hospital, expressed the institution's gratitude for the gift.

Dr. Joseph F. McCarthy, president of the faculty, in officially accepting the gift in behalf of the faculty and the hospital, said the gallery represented a graphic portrayal of the sixty-one year history of Polyclinic Hospital and afforded a constant source of inspiration to practicing surgeons and physicians today.

With the exception of seven men, Drs. Delavan, Sachs, Whiting, Kerley, Wightman, Whitman and Dillingham, the honored men are dead. The complete list of those whose portraits appear in the gallery follows:

WILLARD PARKER, M.D., Professor of Surgery, 1881. Willard Parker Hospital was named for him.

PAUL MUNDE, M.D., Professor of Gynecology, 1881. One of the founders of the New York Polyclinic Medical School and Hospital; author of a textbook on gynecology.

ANDREW R. ROBINSON, M.D., Professor of Dematology, 1881. One of the founders of the New York Polyclinic Medical School and Hospital; well-known dermatologist of his time; author of a textbook on dermatology.

LANDON CARTER GRAY, M.D., Professor of Neurology, 1881. One of the pioneers in his field; author of a textbook on neurology.

ABRAHAM JACOBI, M.D., Professor of Medicine Pediatrics, 1881. Author of a textbook.

W. GILL WYLIE, M.D., Professor of Gynecology, 1881. One of the founders of the New York Polyclinic Medical School and Hospital; was attending gynecologist then consulting gynecologist to Bellevue Hospital.

ARPAD G. GERSTER, M.D., Professor of Surgery, 1881. Was attending surgeon to Mount Sinai Hospital.

VIRGIL P. GIBNEY, M.D., Professor of Orthopedics, 1881. Was Professor of Orthopedic Surgery at Columbia University and was surgeon in chief at the Hospital for Ruptured and Crippled.

D. BRYSON DELAVAN, M.D., Professor of Rhinolaryngology, 1883. Was attending rhinolaryngologist, then consulting rhinolaryngologist to St. Luke's Hospital.

L. EMMETT HOLT, M.D., Professor of Pediatrics, 1888. Was Professor of Pediatrics at Columbia University; author of textbook on Pediatrics.

BERNARD SACHS, M.D., Professor of Neurology, 1888. Is Professor of Clinical Neurology at Columbia University and Director of Child Neurology Research at the Freedsam Foundation. Ex-president of the New York Academy of Medicine.

JAMES P. TUTTLE, M.D., Professor of Proctology, 1889. Was one of the pioneers in this specialty in the United States; author of textbook on proctology.

J. RIDDLE GOFFE, M.D., Professor of Gynecology, 1894. Was attending gynecologist to the Woman's Hospital.

WILLIAM RICE PRYOR, M.D., Professor of Gynecology, 1895. Was consulting gynecologist to several New York hospitals; author of textbook on gynecology.

ROBERT C. MYLES, M.D., Professor of Rhinolaryngology, 1895. Was consulting laryngologist to other hospitals; author of textbook on Rhinolaryngology.

FREDERICK WHITING, M.D., Professor of Otology, 1900. Was Professor of Otology at Cornell University and consulting otologist to the New York Eye and Ear Infirmary; author of textbook on the Mastoid.

CHARLES GILMORE KERLEY, M.D., Professor of Pediatrics, 1903. Consulting pediatrician to several New York hospitals; ex-president of the New York County Medical Society; author of textbook on pediatrics.

JOHN A. BODINE, M.D., Professor of Surgery, 1903. Pioneered in local anesthesia in operations for hernia; consulting surgeon to other New York hospitals.

ROYAL WHITMAN, M.D., Professor of Orthopedics, 1905. Was attending surgeon to the Hospital for Ruptured and Crippled and other hospitals; author of textbook on orthopedics.

ORRIN S. WIGHTMAN, M.D., Professor of Medicine, 1912. Consulting physician to several New York hospitals; ex-president of the New York State Medical Society and the New York County Medical Society.

FREDERICK H. DILLINGHAM, M.D., Professor of Dermatology, 1915. Consulting dermatologist to several New York hospitals.

JOHN ALLAN WYETH, M.D., LL.D., founder of the New York Polyclinic Medical School and Hospital, the first postgraduate medical school in the United States; first president of the faculty; Surgeon-in-Chief at the Polyclinic, ex-president of the New York County Medical Society; the New York Academy of Medicine; the American Medical Association; author of several textbooks on surgery.

H. MARION SIMS, M.D., LL.D., one of the founders and Professor of Gynecology New York Polyclinic Medical School and Hospital; founder of the Woman's Hospital in New York City; one of the pioneers in gynecology; author of textbook on gynecology. A statue of Dr. Sims is located at 5th Avenue and 103d Street, opposite the New York Academy of Medicine.

—*The New York Times.*

Modern Methods of Immunization.

Physicians who are concerned with the immunization of infants and children have as their goal the use of materials which will not sensitize the patient and the utilization of routes of administration that cause least discomfort. Definite assistance toward these objectives is provided by use of combined antigents in the opinion of a recent observer (*J. Florida M. A., 28:*330, 1942). The author has employed Combined Diphtheria Toxoid-Tetanus Toxoid, Alum Precipitated (Lilly) for the last three years without any untoward reactions.

The combination of diphtheria and tetanus toxoids is effected by mixing suitable amounts of the respective toxins which have been detoxified by the use of formaldehyde, and precipitating from this combination with alum the diphtheria and tetanus toxoids. The individual toxoids are tested for toxicity prior to mixing, and the combined alum precipitated toxoid is tested for toxicity after precipitation. Potency is determined by injecting guinea pigs with a human dose. After four weeks the blood serums of these animals must show at least two units of diphtheria antitoxin and two units of tetanus antitoxin per cubic centimeter of blood serum.

Should exposure to either diphtheria or tetanus occur before immunization against each disease is completed, the usual procedures for immediate protection of unimmunized subjects should be considered. The combined toxoid is not for treatment, it is a prophylactic measure of active immunization against diphtheria and tetanus.

New Members

New members of the Medical Society of Virginia since the list published in the May, 1941, issue of the MONTHLY are:

Dr. Oris Aaron, Raven.
Dr. John Evan Alexander, Roanoke (now at Evansville, Ind.)
Dr. Donald Lurton Arey, Danville.
Dr. Leslie M. Bell, Winchester.
Dr. James Franklin Blades, Richmond.
*Dr. Daniel Coleman Booker, Richmond.
Dr. George Simmerman Bourne, Roanoke.
*Dr. George Steel Bowers, Altavista.
Dr. Julius Frederick Chairsell, Jr., Christiansburg.
Dr. James John Clark, Richmond.
Dr. Kenneth Cooper, Lynchburg.
Dr. George Barksdale Craddock, Lynchburg.
Dr. Arthur Abby Davis, Radford.
Dr. George Daniel Denton, Alexandria.
Dr. Martin Leopold Dreyfuss, Clifton Forge.
Dr. Charles Allen Easley, Jr., Danville.
Dr. Edmund Murdaugh Ellerson, Staunton.
Dr. Otto Anderson Engh, Alexandria.
Dr. Frederick Oliver Fay, Norfolk.
Dr. Burton Eugene Field, Richmond.
Dr. Charles James Frankel, University.
Dr. Harry Maurice Frieden, Norfolk.
Dr. Ramon D. Garcin, Jr., Richmond.
Dr. William Yates Garrett, Eastville.
Dr. John Ferguson Gayle, Newport News.
Dr. Charles Francis Gaylord, Staunton.
Dr. Barnes Gillespie, Hilton Village.
Dr. Edward Thomas Glover, Portsmouth.
Dr. Grover Cleveland Godwin, Roanoke.
Dr. Edward John Guilfoyle, Norfolk (now at Palmerton, Pa.)
*Dr. June Uriah Gunter, Roanoke.
Dr. John Bland Hamilton, University (now at Kingsport, Tenn.)
Dr. Millard Charles Hanson, Richmond.
Dr. Ivor David Harris, Charlottesville.
Dr. William Rollan Hill, Richmond.
Dr. John Gill Holland, Lynchburg.
Dr. John Stewart Howe, Richmond.
*Dr. Christian Kevin Campbell Hoyle, University.
Dr. Marion Kemper Humphries, Jr., Charlottesville.
Dr. Thomas Jackson Humphries, Roanoke.
Dr. Herbert Bryan Hutt, Alexandria.
Dr. Otto Kastenbaum, Deltaville.
Dr. Prentice Kinser, Jr., Danville.
Dr. Herbert Carl Lee, Richmond.
Dr. Louis Selnik Leo, Norfolk.
Dr. Nolton S. Lieberman, Portsmouth.
Dr. Carl Scott Lingamfelter, Jr., Richmond.
Dr. Alexander McCausland, Radford.
Dr. John Cameron McCluer, Alexandria.
Dr. John Osborne McNeel, Charlottesville.
Dr. Stanley Howard Macht, Crewe.
Dr. Donald Forbes Marshall, Norfolk.
Dr. Wiley Roy Mason, Jr., Charlottesville.
Dr. Lemuel Edouard Mayo, Jr., Portsmouth.
Dr. Heinz Charles Meyer, Konnarock.
Dr. Robert Sylvester Munger, Lexington.
Dr. Vito John Murgolo, Portsmouth.
Dr. Roy Glenn Parks, Temperanceville.
Dr. Norman Guthrie Patterson, Arvonia (now at Richlands).
Dr. Peter Nicholas Pastore, Richmond.
Dr. Boyd Hawthorne Payne, Staunton.
Dr. Charles Grandison Pearson, Charlottesville.
Dr. Thomas Martin Peery, Arlington.
Dr. Bickerton Lewis Phillips, Richmond.
Dr. Jesse James Porter, Norton.
Dr. John Fairman Preston, Jr., Blacksburg.
Dr. Weldon Aubrey Price, Arlington.
Dr. Albert G. Schnurman, Radford (now at Roanoke).

*Home address given as now in service.

Dr. William Porter Sellers, Norfolk.
Dr. Andrew Dishart Shapiro, Roanoke.
Dr. Edward Valentine Sigel, II, Hampton.
Dr. John Adrian Sims, Alexandria.
Dr. Russell Bruce Smiley, Salem.
Dr. Norman Sollod, Highland Springs.
Dr. Henry G. Steinmetz, Arlington (now at Flint, Mich.).
Dr. James Lawrence Stringfellow, Culpeper.
Dr. James Fredrick Thackston, St. Charles.
Dr. Algernon Keeling Turner, Bent Mountain.
Dr. John Chapman Watson, Roanoke.
Dr. Clifford Airston Webb, Alexandria.
Dr. Harry Blair Yeatts, Danville.

Public Health Statistics

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for January, 1942, compared with the same month in 1941 follows:

	JANUARY 1942	JANUARY 1941
Typhoid and Paratyphoid Fever	33	8
Diarrhea and Dysentery	104	47
Measles	780	850
Scarlet Fever	196	194
Diphtheria	72	40
Poliomyelitis	0	3
Meningitis	18	6
Undulant Fever	2	2
Rocky Mountain Spotted Fever	0	0
Tularemia	11	8

HOSPITALIZATION FOR THE TUBERCULOUS PREGNANT

It has been difficult for pregnant women with clinical tuberculosis to obtain adequate hospital delivery care in Virginia. There being no arrangements for obstetrical care at the state tuberculosis sanatoria, women admitted to these institutions and found to be pregnant of necessity have been discharged to make such arrangements as they could for the confinement. Consequently, proper supervision of the tuberculosis condition is interrupted and often is not sought or secured at any stage thereafter. Moreover, the maternity care secured by the patient frequently is very inadequate. Usually these patients return to their local communities for delivery care. This is difficult to obtain in many of the smaller hospitals due to inadequate facilities, failure of the patient to realize the necessity for such care, and the inability to pay for this service.

Frequent disasters can be noted in these women at any stage of pregnancy, but particularly during the first six weeks postpartum. Lack of arrangements for delivery care generally means home delivery and continued contact of mother and newborn infant.

A cooperative plan has been arranged between the Blue Ridge Sanatorium and the University of Virginia Hospital whereby white women with tuberculosis complicated by pregnancy may be given both sanatorium and delivery care.

Application for admission to the sanatorium is made on the regular sanatorium blanks at any stage of pregnancy. Therpeutic abortion and sterilization is included in this plan when indicated. Applications should be mailed direct to the Superintendent and Medical Director of Blue Ridge Sanatorium, Charlottesville, Virginia, as this is the only institution in the State in which this arrangement now is possible.

All applicants will be placed on the regular waiting lists maintained for new and ex-patients. No preference can be given these patients and they will be admitted in the order applications are received. Ex-patients will receive no preference. It will be necessary to make the usual arrangement for payment for sanatorium care ($1 per day for pay cases); or, if the patient's circumstances justify it, to apply for a free bed. All charges incident to obstetrical care at the University Hospital, including care of the new born, will be paid from funds of the State Health Department's Bureau of Maternal and Child Health for such patients who are unable to afford hospitalization arrangements.

Patients are to be given isolation hospital care at delivery, and will be kept at the hospital for such length of time as may be necessary. Immediately after delivery, newborn infants are to be separated from their mothers. After sufficient postpartum care has been given, the patient will be returned to Blue Ridge Sanatorium. In this manner, pneumothorax and other measures as may be indicated will be available during the entire postpartum period. Patients readmitted to the Sanatorium are to remain for the time indicated by their condition.

A statement must be included with the sanatorium application as to the arrangement for the care of the infant following its discharge from the hospital fourteen days after delivery. It is necessary that plans

be made for the baby to be received into the home of the patient, of a relative, or of a responsible friend, to permit the mother to continue sanatorium care at the sanatorium. If satisfactory arrangements for the care of the baby cannot be made, the local department of public welfare should be requested to make provision for foster-home care.

If the plan proves successful, it is expected that a similar one for Negro patients later may be possible at another institution.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. E. LATANE FLANAGAN, Richmond.
President-Elect—MRS. H. W. ROGERS, Norfolk.
Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.
Corresponding Secretary—MRS. A. S. LILLY, Richmond.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

Woman's Auxiliary to Richmond Academy of Medicine.

This Auxiliary held its annual meeting on November 27, at which time the following officers were elected: President, Mrs. Percy Everett Schools; vice-president, Mrs. A. G. Shetter; recording secretary, Mrs. P. H. Drewry; treasurer, Mrs. Douglas Chapman; historian, Mrs. Ramon D. Garcin; parliamentarian, Mrs. J. Gordon Boisseau; and corresponding secretary, Mrs. Harry B. Hinchman. Chairmen of Standing Committees are: Membership, Mrs. Reuben Simms; Program, Mrs. Andrew G. Shetter; Publictiy, Mrs. W. Ambrose McGee; Social, Mrs. Raymond Hooker; Defense, Mrs. James K. Hall; and Legislative, Mrs. James Blades.

On January 16, we were happy to have as one of our guest speakers the President of the Woman's Auxiliary to the Medical Society of Virginia. Mrs. E. Latane Flanagan chose from her subject "The Aims and Objectives of the Woman's Auxiliary." Many favorable comments were heard in reference to this talk and I am sure everyone present was benefitted.

At this same meeting, Miss Claire McCarthy, Executive-Secretary of the Richmond Defense Council, outlined the work of her office and made suggestions for the future defense efforts of our organization.

We are happy to report an attendance of sixty-one at our January meeting; this number includes sixteen new members.

The benefit card party held each year by our group took place on February 6. Our main philanthropic work this year is the purchasing of work materials for the underprivileged patients in the psychiatric department of the Medical College of Virginia. This is a part of our home defense and should not be neglected.

On April 17, we are planning a tea at which the wives of the medical officers stationed at Camp Lee will be our guests. We shall be delighted to have any of the members of the executive board of the Woman's Auxiliary to the Medical Society of Virginia who may be in Richmond at this time to also have a "cup of tea" with us on this day.

The members of our advisory committee from the Richmond Academy of Medicine are: Drs. Fred Wampler, J. D. Hinchman, and Reuben Simms.

EVELYN MALLORY SCHOOLS (MRS. P. E.)

Norfolk Auxiliary.

The following is an account of the Public Relations Tea held by the Norfolk County Medical Society Auxiliary on January 14, in the library of the Medical Arts Building:

Following a short business meeting presided over by the President, Mrs. W. P. Adams, the Auxiliary was addressed by Dr. M. H. Todd. He outlined the types of emergencies with which the women of this community may be faced in the event of an enemy attack. In meeting these emergencies Dr. Todd urged particularly that the doctor's wife should be familiar with first-aid work. He spoke, also, briefly on the essentials of first-aid such as the stopping of bleeding, treatment of broken bones, and artificial respiration. Casualties from bomb fragments, shocks, falling buildings, and such emergencies were likewise described by the speaker.

LILA I. SMITH, (MRS. C. C.)

National Meeting.

Haddon Hall will be the headquarters for the Annual Meeting of the Woman's Auxiliary to the American Medical Association, which will be held in Atlantic City, New Jersey, June 8-12, 1942.

Requests for reservations should be sent immediately to Haddon Hall, Atlantic City, New Jersey.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us the same.

A Primer on the Prevention of Deformity in Childhood. By RICHARD BEVERLY RANEY, B.A., M.D., Associate in Orthopaedic Surgery, Duke University School of Medicine; Attending Orthopaedic Surgeon, Watts Hospital, Durham, N. C. In Collaboration with ALFRED RIVES SHANDS, JR., B.A., M.D., Medical Director, Alfred I. DuPont Institute of The Nemours Foundation, Wilmington, Del.; Visiting Professor of Orthopaedic Surgery, University of Pennsylvania School of Medicine. 1941. National Society for Crippled Children, Inc., Elyria, Ohio. xix-188 pages. Illustrated by Jack Wilson. Cloth. Price $1.00.

Clinical Roentgenology of Pregnancy. By WILLIAM SNOW, M.D., Director of Radiology, Bronx Hospital; Roentgenologist-in-Charge, Harlem Hospital, New York City. Charles C. Thomas, Baltimore, Md. 1942. 178 pages. Cloth. Price $4.50.

The Eclipse of a Mind. By ALONZO GRAVES. The Medical Journal Press. New York, N. Y. xii-722 pages. Cloth.

Encephalitis. A Clinical Study, By JOSEPHINE B. NEAL, A.B., M.D., Sc.D., F.A.C.P., Associate Director, Bureau of Laboratories, Department of Health, New York; Clinical Professor of Neurology, College of Physicians and Surgeons, Columbia University. Grune & Stratton. New York. 1942. xviii-563 pages. Cloth.

Neuroanatomy. By FRED A. METTLER, A.M., M.D., Ph.D., Professor of Anatomy, University of Georgia School of Medicine. St. Louis. The C. V. Mosby Company. 1942. 476 pages. With 337 Illustrations Including 30 in Color. Cloth. Price $7.50.

Textbook of Embryology. By HARVEY ERNEST JORDAN, M.A., Ph.D., Sc.D., Professor of Anatomy and Director of the Anatomical Laboratories, University of Virginia. And JAMES ERNEST KINDRED, M.A., Ph.D., Professor of Anatomy, University of Virginia. Fourth Edition. D. Appleton-Century Company. New York. 1942. xiv-613 pages. Cloth. Price $6.75.

The Blood Bank and the Technique and Therapeutics of Transfusions. By ROBERT A. KILDUFFE, A.B., A.M., M.D., F.A.S.C.P., Director, Laboratories, Atlantic City Hospital; City Bacteriologist, Atlantic City; Serologist, Municipal Hospital for Contagious Diseases; Pathologist, Atlantic County Hospital for Tuberculous Diseases; etc. And MICHAEL DEBAKEY, B.S., M.D., M.S., F.A.C.S., Assistant Professor of Surgery, School of Medicine. Tulane University of Louisiana; Visiting Surgeon, Charity Hospital, Touro Infirmary, and Mercy Hospital, New Orleans; etc. St. Louis. The C. V. Mosby Company. 1942. 558 pages. With Two Hundred Fourteen Illustrations and One Color Plate. Cloth. Price $7.50.

Treatment of The Patient Past Fifty. By ERNST P. BOAS, M. D., Associate Physician, Mount Sinai Hospital, New York City; Chairman, Committee on Chronic Illness, Welfare Council of New York City; etc. The Year Book Publishers, Inc. Chicago. 1941. 324 pages. Cloth. Price $4.00.

"Of making many books there is no end". If the reader feels that the author is called upon to justify himself for writing this book, let him read the first ten lines of his preface and the first ten lines of his first chapter. He says, "The middle aged, the elderly and the aged make up a steadily increasing proportion of the physician's practice" . . . "At the beginning of the twentieth century about 4 per cent of our population were over sixty-five years of age" . . . "In the United States there now are actually 6,000,000 more persons who are sixty-five years of age or older than there were in 1900, and it is estimated that by 1980 the total number of those in this age group will be 22,000,000." In the light of these facts, does it not behoove the physician, especially the young physician to know his elderly patient?

The physician is advised not to lose sight of the fact that old age is not a disease but only one of the stages in the cycle of life. The preservation of health in old age demands certain adjustments in nutrition and diet, rest and sleep, climate and exercise.

In considering the question of retirement, the author reminds us that the advantage, both physical and psychological, of a gradual diminishing of chores and labors and the substitution of light burdens and congenial hobbies far outweighs that of a total abandonment of life work and habits.

One respect in which the practitioner's experience with his elderly patients will differ from his experience with younger ones is that he will have less contact with acute and infectious diseases and those running a short course and will have to deal more with chronic and degenerative conditions of longer duration.

An excellent table of contents which seems to arrange the subjects treated in the order of their importance is very helpful and a very complete index will be of assistance to the reader who wishes to pick out the subjects in which he is particularly interested.

The author clearly indicates the importance of cardio-vascular diseases in old age by giving over about one-third of his space to that subject.

EDWARD MCCARTHY, M.D.

Synopsis of Allergy. By HARRY L. ALEXANDER, A.B., M.D., Professor of Clinical Medicine, Washington University School of Medicine, St. Louis; Editor of The Journal of Allergy. St. Louis. The C. V. Mosby Company. 1941. 246 pages. Cloth. Price $3.00.

As its title suggests, this little book *Synopsis of Allergy,* is a compression of the essential facts of allergy as the specialty is recognized today. In a subject as controversial as this there will naturally occur instances in which the author's opinion is at variance with that of other equally good men. The text is clear, simple and readable, and the author displays considerable skill in presenting the meat of the subject. A number of illustrations and well-chosen tables add to the practical value of this synoptic presentation of the subject in 246 pages.

Nutritional Deficiencies. Diagnosis and Treatment. by JOHN B. YOUMANS, A. B., M. S., M. D., Associate Professor of Medicine and Director of Post-Graduate Instruction, Vanderbilt University Medical School, Nashville, Tennessee. Assisted by E. WHITE PATTON, M. D. Philadelphia. J. B. Lippincott Company. 1941. xii-385 pages. 16 Illustrations. Cloth. Price $5.00.

This book covers the various vitamins of importance in human nutrition, with illustrations of the effects of deficiencies. There are also chapters on mineral deficiencies as calcium, iron, and iodine, and chemical diagnostic tests for deficiencies. The chapters are well arranged, being subdivided into nature and function of the vitamin, pathology, incidence, symptoms, diagnosis, and treatment, so that the desired material may be readily found.

The addition of the discussion on mineral and protein deficiencies, in addition to the vitamins, is an excellent idea, for vitamins are receiving so much publicity at present, that the laity at least, are assuming that this is the only nutritional factor to be considered. This book is ample evidence to indicate that the medical profession is now cognizant of the importance of nutrition, which is a rather recent phenomenon. For instance, I recall that only a few years ago the well-known editor of an almost equally well-known medical journal, apparently spent all of his spare time in writing heated editorials attempting to prove, through verbal prolixity alone, that there was no necessity for the American people to eat whole wheat bread; that their diet was so adequate that white bread was thoroughly satisfactory. Fortunately, nutritionists paid no attention to these claims, and at the present time we find a constantly increasing importance placed on whole wheat bread and even upon its inferior substitute, enriched bread. The author also stresses a point which is often neglected, that rarely do we find a deficiency due to one vitamin; that if for instance thiamin is administered, the rest of the B complex should also be given by means of a complete diet.

In return for the privilege of criticizing this book without affording the author an opportunity to reply, I make the following suggestions which, in my opinion, may improve the next edition to a minor degree: The author states on page 2 "Although man is possibly more dependent on an exogenous supply (of vitamins) than are other animals. . . ." I know of no reason of even suspecting this possibility, for although some animals such as rats and dogs do not require ascorbic acid, nevertheless, I know of no evidence to indicate that monkeys or primates differ in any respect from man. On page 22 Dr. Youmans states "Vitamin A is essential to the health and growth of all vertebrates". This strikes me as a hangover from former times when vitamin A was considered a growth vitamin. However, it has been well shown that practically all vitamins are essential for the health and growth of animals. On page 63 he states "Not all yeast contains B_1. . . ." On questioning the technical director of our largest firm of yeast producers, he replied "Our best source of information has never encountered a pure strain of Saccharomyces cerevisiae that has not contained some vitamin B_1."

This is an excellent book, both in content and arrangement. The physician who is at all interested in nutrition, as all physicians should be no matter what their specialty, will find it very satisfactory as a reference.

R. J. M.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, $2.00. Single Copies, 25c.

VOL. 69. MARCH, 1942. No. 3

Lawmaker Meets Lawbreaker and—

THE laws of Virginia purport to forbid the practice of medicine without a license. That seems reasonable enough on the face of it. They were obviously written by former lawmakers to protect the health and to save the lives of their fellow citizens, for without such laws the sow gelders and poison venders might still be at large in this state.

Recently, spokesmen for eighty members of a cult stood up in a public hearing before a committee of the Virginia state legislature and admitted that they were practicing medicine without a license. Without batting an eye, they acknowledged that they were daily breaking the law and intimated that they intended to continue to do so. They appeared to feel, however, that it would be a little more dignified if they could get the law changed so as to legalize their present practice. To further this end they turned out in considerable numbers, indulged in some old fashioned stump speaking and dragged in a number of pathetic exhibits to impress their audience.

The legislators heard the confessions of the lawbreakers as well as their boasting, and at least some of them did not bat an eye either. One got the impression that they had heard of such dark doings before, and had learned the technique of turning a deaf ear. When the wonder-workers, however, brought in their exhibits, our Solons seemed to slip out of their moral lethargy. They pricked up their ears and appeared interested. Some actually confessed that they too had been with Saul to the mystic regions of Endor. Others evinced that child-like amazement which impels the boy at his first circus to slip into the tent where they "eat 'em alive," "swallow the sword" or promise to produce "the man without a head."

Such a committee was hardly prepared mentally or emotionally to consider from the Medical Society of Virginia, representing the 2,000 licensed doctors of the state, a proposal that something be done to protect the citizens of the state from quackery and the illegal practice of medicine. Nevertheless the representatives of the Medical Society of Virginia did their best. They came before them, called their attention to the law upon the statute books forbidding the practice of medicine without a license and pointed out the flagrant violations of the law which were now being practiced. They asked for the right of injunction, a simple amendment that would make it enforcible. They asked it in the name of humanity to protect the citizens of this state from a form of medical practice that is not only threatening individual lives but is endangering the whole public health structure of the Commonwealth. They tried to give the committee the facts. They argued. They pled. It was to no avail.

The facts remain. The law of Virginia in regard to the illegal practice of medicine as it is now written is difficult to enforce. The Legislature knows this. It refuses to strengthen the law so that it can be enforced.

In order that the doctors of Virginia may know who their friends are, in order that the citizens of Virginia may know those who are interested in protecting their lives against the illegal practice of medicine, we urge both doctors and citizens to look into the ballots of the Committee on General Laws and see for themselves just how the vote went on House Bill Nos. 51 and 52.

Doctors' Dilemma

THE *New York Times* has not generally been distinguished for its expressions of sympathy or respect for the medical profession—certainly not within recent years. It is of more than usual interest therefore to see a prominent editorial in a recent issue setting forth its concern for the medical crisis which has developed out of the war emergency, and exhibiting some admiration for the way in which medical men are responding to the emergency.

The Times points out that an army of 5,000,000 men requires 32,500 medical officers to be recruited from a profession of 146,000 men now in medical practice, but that only 70,000 of these 146,000 are physically fit for active duty. These figures mean that almost one-half of the physically fit physicians of this country will have to see active service. When it is realized that few men over fifty will be desired, the proportion of young doctors who will have to answer the call of military duty will be astonishing.

For the older men left behind this will mean work and responsibility far in excess of what they are now carrying. Busy doctors past their meridian, who have already begun to feel the afternoon fatigue that heralds the approach of the chronic incapacitating diseases of the later decades of life, will be put to it to accomplish their tasks. Many of them cannot do more work than they are now doing in spite of the necessity arising from the telescoping of the medical curriculum which offers them a heavier load of teaching and from the loss of younger practitioners which offers them a heavier load of practice.

One way out of the doctors' dilemma is to use to a greater extent than ever before the semitrained help of nurses, technicians and orderlies. For example, some emergency ambulance service can be put in charge of orderlies.

More effective, if practicable, would be the limiting of medical attention to the really sick. It is well known that 50 per cent of those visiting the internist come with imaginary ills. It is these patients who consume most of the doctor's time, because, of course, it takes longer to describe an illness that does not exist than to relate the *bona fide* symptoms of true organic disease. If these pseudo-sick could be sidetracked it would be a step towards confining medical practice, at least for the duration of the war, to those actually ill. In England, it is said, that the bombing and privations that the civilian population has had to undergo have practically eliminated the neuroses. Must we wait in this country for death and disaster to cure the talking, time-consuming class of patients whose only disease is that they think they are sick? Often these persons think they are unwell because they have nothing to do that interests them. On this front volunteer listeners and vocational experts might rally to the relief of the hard pressed medical man.

Speak the Speech, I Pray You

MEDICAL pronunciation has not always done credit to the scholarship which is assumed to be the doctor's. Physicians as well as laymen often mispronounce familiar medical terms. Migraine, pellagra, quinine, appendicitis, anus, and a number of other words are daily incorrectly pronounced even by the experts in the fields where they are most frequently used.

The discovery of the sulfonamides, bringing with them a host of new names, sulfanilamide, sulfapyridine, sulfaguanidine, sulfathiazole, sulfadiazine, calls for some attention in this respect, and the Committee on Nomenclature of the Council on Pharmacy and Chemistry of the American Medical Association is to be thanked for its recent recommendations concerning their several pronunciations.

The Council's report makes it plain that the word 'amide' is to be pronounced with a long 'i' (amīde), because of its final 'e' and because of the analogy with chloride and iodide. Sulfanilamide should there-

fore be sulfanilamīde, with the major accent on the antepenultimate syllable 'il'. "In agreement with the principle that English accentuation is recessive, it is believed that the preferred accent would be on the syllable thī in sulfathīazole."

Those Questionnaires

ELSEWHERE we are pleased to publish a communication from Dr. Hugh H. Trout of Roanoke amplifying and clarifying a questionnaire recently published in this journal and in *The Journal of the American Medical Association.* It is hoped that every physician will fill out these questionnaires and return them to Dr. Seeley's office as soon as possible.

From time to time the physicians of this state may expect to find in the columns of the VIRGINIA MEDICAL MONTHLY, as well as in *The Journal of the American Medical Association,* items referring to the war effort and the responsibilities which are imposed by it upon the medical profession. We would advise the readers of this journal to scan its columns regularly and carefully for information of this character.

Official Preparations

THE Virginia Pharmaceutical Association is interested in popularizing prescriptions using U. S. P. and N. F. products. Perhaps a time like this is especially well suited for reminding the medical profession of several simple prescriptions which have the virtue of being sponsored officially by both the medical and pharmaceutical professions and which have also the backing of long clinical experience and trial. These prescriptions recommend themselves because of their known content and because they are not expensive.

The Virginia Pharmaceutical Association has asked and received permission to lay into this issue of the *Monthly* a folder containing several old and official remedies. Some of them have recently been published by the American Medical Association.

Department of Clinical and Medical Education of the Medical Society of Virginia

Department Meetings.

At the request of Dr. W. B. Martin, Chairman, a meeting of the Department of Clinical and Medical Education was held in Richmond on February 6 for the purpose of planning the year's program. Members in attendance were Dr. W. B. Martin, Dr. J. W. Preston, Dr. H. B. Mulholland, Dr. Lee E. Sutton and Mr. George B. Zehmer. Also present was Dr. A. L. Carson, Jr., representing Dr. I. C. Riggin, who could not attend.

In view of war conditions and the increased demands upon practicing physicians and the Medical School staffs, it was agreed that a change of emphasis is called for in the program of postgraduate instruction for the coming year. It seems unlikely that the usual clinics can be held at the Medical Schools, but it was agreed that the Department of Clinical and Medical Education could be of service in the following ways:

1. Continuing to offer assistance to component societies by furnishing speakers on their regular programs.
2. Assisting component societies in financing and sponsoring local postgraduate programs of lectures and clinics, especially in the field of industrial medicine and miltary medicine.
3. Reporting through the columns of the VIRGINIA MEDICAL MONTHLY on recent pamphlets and articles dealing with industrial medicine, military medicine and other timely topics.
4. Reporting similarly upon postgraduate activities and programs being conducted in other parts of the country.

In carrying out the program above, the assistance of the two Medical Schools and the State Department of Health will be sought. Component societies interested in enlisting the aid of the Department of Clinical and Medical Education in any of these

activities are invited to communicate with the Executive Secretary.

Programs in Other States.

It is interesting to note that some societies are continuing their postgraduate programs and adapting them to the war situation. The Massachusetts Medical Society is offering a Combined General and Venereal Disease course in nine centers during the spring. This program, which was announced after the declaration of war, includes a clinic on Dermatitis and Eczema in Wartime Industry covering diagnosis, local treatment and prevention.

G. B. ZEHMER,
Executive Secretary.

Societies

Industrial Health Committee.

A meeting of the Committee on Industrial Health of the Medical Society of Virginia was held in Richmond on January 30, 1942, with the following members in attendance: Dr. C. B. Bowyer, Dr. H. W. Decker, Dr. G. McL. Lawson, Dr. J. B. Porterfield (substituting for Dr. I. C. Riggin), Dr. H. U. Stephenson, and Dr. F. J. Wampler.

It was decided to offer the Virginia Manufacturers' Association and the Virginia Statewide Safety Conference our assistance in an effort to get laymen and doctors to speak on the subject of industrial health at their conferences this year.

A committee was appointed to work up programs with speakers on industrial health which could be suggested to the component societies of the Medical Society of Virginia from which they could select a suitable program on this subject for the physicians in their groups. This committee has practically completed these programs and will be glad to send copies of them to the secretaries of the different societies for their selection. Since the Committee on Industrial Health has no funds at its disposal to pay travel expenses in the few cases where travel expenses might be necessary, it was decided to take this matter up with the Committee on Postgraduate and Clinical Education of the Medical Society of Virginia to see if they could help out on this problem.

The members of the Virginia Society of Safety Engineers in the Richmond area requested that the bureau of industrial hygiene of the State Health Department help them hold a course in industrial hygiene for its members. Our Committee agreed to sponsor this program.

Because of the great difficulty there would be in getting outstanding speakers for the symposium on industrial health that has been held annually at the Medical College of Virginia and because of the much increased work on the local medical faculty due to the step-up in teaching schedules, the Committee agreed with the department of preventive medicine at the Medical College of Virginia that it, perhaps, would be advisable to leave off the symposium for this fall.

F. J. WAMPLER,
Chairman.

Fairfax County Medical Society.

The last regular meeting of the Society was held on February 5, at the Vienna Medical Center. Members were shown through the building, which is a private institution directed by Drs. Sigmund and Emanuel Newman and Dr. J. Alexander. It consists of consultation and waiting rooms, a two-bed ward, facilities for operating, and for x-ray, eye, ear, nose and throat work, and basal metabolism tests.

The scientific program consisted of two case reports, with patients present for examination. Dr. Alexander presented a case of Mixed Tumor of the Parotid Gland which he removed during a long operation, without a trace of paralysis resulting. Dr. Emanuel Newman presented a case of Polycythemia Vera which he had studied and worked up in detail.

The Ciba Pharmaceutical Company presented a 45-minute sound motion picture on Coramine, which was very complete and interesting.

The subject of medical practice by an osteopathic physician in the county was discussed. House Bills 51 and 52 were approved and House Bill 195 rejected. The Defense officer, Dr. G. R. Carpenter, spoke about plans for organization of the county doctors for defense, and Dr. Kiessling, who is now

giving first aid instruction in the county, told of the Red Cross First Aid Course for physicians, given by Dr. L. M. Thompson in Washington.

Present officers of the Society are: President, Dr. Dr. William David Chase, McLean; vice-president, Dr. T. B. McCord, Fairfax; secretary, Dr. Alice Heyl Kiessling, East Falls Church; and treasurer, Dr. Sigmund Newman, Vienna.

Patrick Henry Medical Society.

The regular quarterly meeting of this Society was held at the Broad Street Hotel, Martinsville, on January 9, at 7 P. M., with the newly elected officers in charge: President, Dr. G. B. Dudley, Martinsville; vice-president, Dr. E. N. Shockley, Bassetts; and secretary-treasurer, Dr. H. M. Price, Martinsville.

The scientific program was omitted because the guest speakers were unable to attend due to a heavy snowfall. A successful business meeting was conducted, and the following appointments were made by the president: Dr. F. B. Teague as Chairman of the Program Committee; Dr. W. N. Thompson as Chairman of the Membership Committee; and Dr. C. R. Titus, Chairman of the Ethics Committee.

The Mid-Tidewater Medical Society

Met at West Point for its regular quarterly meeting on January 27. At the business session, a resolution was adopted, authorizing the secretary to write representatives in the Legislature from all counties included in the Society, requesting support of the bills (H. B. 51 and H. B. 52) concerning medical practice. Dr. Otto Kastenbaum of Deltaville was elected to membership.

An open forum program was then conducted by Dr. Hawes Campbell of Turpin and Dr. J. Powell Williams of Richmond on "Hormones of Internal Secretory Glands and Substitution Products." Following this, luncheon was served by the local committee to members, guests and the Woman's Auxiliary.

The afternoon program consisted of a general discussion of "Vitamins" and "Heart Conditions," those taking part in this being Drs. T. D. Davis, D. G. Chapman, Chas. C. Haskell, Chas. M. Caravati of Richmond, and members of the Society.

Dr. A. W. Lewis of Aylett is president and Dr. M. H. Harris of West Point, secretary.

James River Medical Society.

At the annual meeting of this Society, officers elected for 1942 are: President, Dr. E. B. Nuckols of Cumberland; vice-president, Dr. Percy Harris of Scottsville; and secretary-treasurer, Dr. Garland Dyches (re-elected) of Dillwyn.

Richmond Academy of Medicine.

Dr. Nicholas J. Eastman, professor of obstetrics at Johns Hopkins Medical School, Baltimore, was guest speaker at the meeting of the Academy on February 24, his subject being "The Hazards of Pregnancy and Labor in the Grande Multipara." At this meeting, Dr. B. B. Bagby, Jr., presented a case report.

Speakers at the first February meeting were Drs. E. L. Kendig, Jr., R. C. Siersema and William Bickers. The president, D. Beverley R. Tucker presided at both meetings which were followed by buffet suppers in the dining room.

The Academy is holding a series of lectures on phases of medical service for civilian defense and the care of civilian casualties, the fifth in this series having been conducted on February 20 by Dr. J. C. Forbes and Dr. Carrington Williams.

Roanoke Academy of Medicine.

At the February meeting of the Academy on the 2nd, Dr. A. P. Jones spoke briefly concerning the role of the medical profession in civilian defense and Dr. K. D. Graves reported on the present status of home nursing classes in Roanoke. Following the business session, Dr. J. C. Watson presented a paper on Virus Pneumonia and Dr. Fred F. Davis read a paper on Primary Closure of Compound Fractures, which was illustrated. Light refreshments followed the meeting.

Dr. M. H. Williams is president of the Academy and Dr. H. B. Stone, Jr., secretary. Both are of Roanoke.

Lynchburg Academy of Medicine.

At the February meeting of the Academy Dr. Elam C. Toone, Jr., of the Medical College of Virginia, Richmond, gave an interesting and instructive talk on the Colloidal Gold Treatment of Rheumatoid Arthritis.

Dr. John Hundley, Jr., and Dr. J. A. Wilkins, both of Lynchburg, are president and secretary, respectively.

News

Maternal Mortality in Philadelphia 1931-1940.

This is a report of the Committee on Maternal Welfare of the Philadelphia County Medical Society. The Philadelphia Committee was one of the first to make an intensive study of maternal deaths, and its elaborate report in 1934 has been a great help to the Virginia Committee. The present report is of especial interest in that it shows what has been accomplished in the ten years of work by the Philadelphia Committee. There has been a reduction of nearly 62 per cent in the puerperal death rate in Philadelphia. The greatest decline was shown in the deaths due to albuminuria and eclampsia. There was also a gradual decrease in the death rate from peurperal sepsis exclusive of abortion cases. Among the less frequent causes of death, "embolus and sudden death" dropped from 6.5 per cent of the total to 1.3 per cent. This is a great tribute to the educational value of the work of the Committee. As the maternal mortality decreased it was noted that fewer babies were stillborn, the stillbirth rate dropping from 42.8 per 1000 births to 26.8.

Out of the work of the Committee on Maternal Welfare has grown committees to study the cause of stillbirths, of neo-natal deaths and of prematurity, and even a sub-committee known as the Prospective Fathers' Classes. Finally there is quite an impressive list of scientific papers based upon the material gathered by the Committee.

M. P. RUCKER, *Chairman,*
Maternal Health Committee,
Medical Society of Virginia.

The Neuropsychiatric Society of Virginia

Held its winter meeting in Richmond on February 11 under the presidency of Dr. W. Gayle Crutchfield of the University of Virginia. The following program was presented: Subcortical Intracranial Hemorrhage of Surgical Significance by Dr. J. M. Meredith; The Pharmacology of Tobacco by Dr. Harvey B. Haag; Urinary Gonadotropin in Males and Females by Dr. Rolland J. Main; and Personal Experiences with Selective Service Psychiatry by Dr. O. B. Darden. All speakers are of Richmond.

At the business session, the following officers were elected: President, Dr. Howard R. Masters, Richmond; vice-president, Dr. Edward H. Williams, Richmond; and secretary-treasurer, Dr. Joseph R. Blalock, Marion.

The meeting closed with a smoker and membership dinner.

News from the University of Virginia.

At the meeting of the Fourth District and Southside Virginia Medical Society in Petersburg, on December 30, 1941, Dr. David C. Wilson presented a paper on "The Early Diagnosis of Mental Disease".

Dr. Edwin P. Lehman presented the Hodgin Lecture of the St. Louis Surgical Society before the St. Louis Medical Society, at St. Louis, Mo., on January 13. His subject was "Heparin and Inflammation, with Particular Reference to Peritoneal Adhesions".

Dr. Eugene M. Landis spoke before the Stuart Circle Hospital Staff in Richmond, on January 14. His subject was "Practical Aspects of Tests of Kidney Function".

On February 11, Dr. David C. Wilson presented a paper before the meeting of the Mid-South Postgraduate Medical Association in Memphis, Tennessee, on the subject "Practical Methods of Diagnosis in Nervous and Mental Diseases". On February 12, Dr. Wilson spoke on the same subject before the Hamilton County Medical Society, at Chattanooga, Tennessee.

Dr. E. C. Drash presented a paper before the Society of the University of Surgeons, meeting in Cincinnati, Ohio, on February 13. His subject was "The Treatment of Impenetrable Esophageal Strictures by a Combined Intra-esophageal and Extra-esophageal Approach".

Dr. Francis M. Rackemann of Harvard University spoke before the meeting of the University of Virginia Medical Society on February 13. Dr. Rackemann's subject was "The Asthma Problem".

News from Duke University School of Medicine.

At the beginning of the winter quarter, there were 247 medical sudents, 74 first year, 62 second year and 111 juniors and seniors.

On November 11, 1941, Dr. Michael Heidelberger,

of the Department of Medicine of the College of Physicians and Surgeons, New York City, spoke to the Duke Medical Society on "Recent Advances in the Knowledge of Complement and Its Function."

The following have addressed the staff and students: On December 10, 1941, Dr. J. M. McIntosh, Professor of Public Health, University of Glasgow, Scotland, on "The Medical Student in War Time;" on January 14, 1942, Mrs. Mary P. Diaz, of Puerto Rico, on Occupational Therapy in Puerto Rico; on February 11, Professor Ralph Linton, Professor of Anthropology at Columbia University, New York City, on "Culture in the Normal Personality."

Dr. R. W. Graves, Assistant Professor of Neurology, has been appointed as one of the Army Consultants on Meningitis.

Dr. J. M. Ruffin, Associate Professor of Medicine, has been appointed as one of the Army Consultants on Tropical Diseases.

Dr. Ramon D. Garcin,

Richmond, was recently re-elected a member of the board of directors of the Bank of Commerce and Trusts of this city.

R.O.T.C. Summer Camps to be Discontinued at Carlisle Barracks.

Announcement has been made by Brigadier-General Addison D. Davis, Commandant of the Medical Field Service School, Carlisle Barracks, that the Reserve Officers' Training Corps summer camps at the Medical Field Service School will not be held next summer. These have been conducted at the Carlisle Post every summer since 1921, and have been an important means of peace-time instruction, training and preparation of medical students for commissions in the Medical Corps, upon their graduation from various medical colleges throughout the country.

Tri-State Medical Association of the Carolinas and Virginia.

At the annual meeting of the Association, held in Greenville, S. C., February 23 and 24, Dr. George R. Wilkinson of Greenville, S. C., succeeded to the presidency and Dr. Frank S. Johns of Richmond was named president-elect. The vice-presidents are: Dr. Walter B. Martin, Norfolk; Dr. K. B. Pace, Greenville, N. C.; and Dr. C. W. Evatt, Charleston, S. C. Dr. J. M. Northington of Charlotte, N. C., was re-elected secretary-treasurer. It was voted to hold the 1943 meeting in Lynchburg, Va.

Married.

Dr. Benjamin Watkins Rawles, Jr., and Mrs. Helen Hodges James, both of Richmond, February 21.

Dr. John Campbell Hortenstine of the University of Virginia and Miss Georgie Macoy Stringfellow of Culpeper, January 31.

Dr. Thomas Felix Coates and Miss Nancy Lewis Salter Shewmake, both of Richmond, January 31. Dr. Coates graduated from Medical College of Virginia last June and is now interning at Johnston Willis Hospital, this city.

Elected to Membership in American College of Physicians.

At a meeting of the Board of Regents of the College, December 14, Dr. Walter L. Nalls of Richmond and Dr. John Braxton McKee of Winchester were elected to fellowship, and Drs. Robley Dunglison Bates, Jr., Morton Morris Pinckney and Elam Cooksey Toone, Jr., all of Richmond, were elected to associateship.

Dr. Wyndham B. Blanton,

Richmond, attended the recent meeting of the Committee on Research in the History of American Medicine which was held at the Institute of Medical History in Baltimore. Other members of the committee are Richrad H. Shryock of Philadelphia, Iago Goldston of New York, Howard Dittrick of Cleveland, and Henry Sigerist of Baltimore.

Proposed Graduate Course in Industrial Hygiene and Medicine.

The Medical College of Virginia announces the arrangement of a postgraduate course in industrial medicine and health to be given by that institution beginning immediately. This is arranged especially to orientate physicians who have never had special training in industrial medicine to the problems of industrial medicine and health, as they now are practiced by modern industrial physicians and surgeons.

Information about what the course includes, costs, and time can be had by writing to Dr. Lee E. Sutton, Jr., dean of the School of Medicine, Medical College of Virginia.

Dr. Scott at Piedmont Sanatorium.

Dr. J. B. Woodson, superintendent of Piedmont Sanatorium, Burkeville, announces the appointment of Dr. Charles W. Scott to have charge of the med-

ical work in that institution. Dr. Scott has for sometime been clinician with the Tuberculosis Out-Patient Service of the State Health Department.

The Physicians' Casualty Association,

An advertiser for some years in this journal, has asked that the following announcement be made:

"In these days when we are all confronted with a question of shortages in various commodities and an increase in the price of those obtainable, we are happy to announce that not only will we continue to carry our policyholders at no increase in the cost of their accident and health insurance, but we adopted a resolution to the effect that there shall be no restriction under our policies by reason of Army, Navy or Marine Service and this is irrespective of where such Service may take the policyholder."

The Richmond Pediatric Society,

At its annual meeting in this city, January 15, elected the following officers for the coming year: President, Dr. T. Stanley Meade; vice-president, Dr. Howard Urbach; and secretary-treasurer, Dr. Herman W. Farber.

Dr. Percy G. Hamlin,

Williamsburg, now Major, M. C., U. S. Army, and stationed at Hoff General Hospital, Santa Barbara, Calif., was in December awarded the Purple Heart. The Order of the Purple Heart is a decoration instituted by George Washington in 1792 and revived by Congress in 1932, and is given to those wounded in action against an armed foe of the United States. Major Hamlin's award was because of a wound received October 5, 1917, while operating with British troops in an attack on the Passchendale Ridge in the Ypres sailient.

Lederle Publishes Interesting Booklets.

Lederle Laboratories, Inc., have recently published two booklets of special interest to our members. They are Vitamin B Complex Abstract Book and Sulfadiazine Abstract Booklet.

The Vitamin B Complex Book provides in compact form a topical survey of accomplishments in the development of Vitamin B components, and their application in a wide range of conditions. It is sixty-two pages in length and presents in abstract form only the most sailent of recent articles from leading medical journals and other sources. The articles have been sufficiently condensed so that each seldom occupies more than a single page. Suggested references are included with each as a guide to more extensive reading and study.

The sixty-four page booklet on Sulfadiazine is also made up of abstracts selected from published articles. In order to compress significant material into a booklet of this size, every article on the subject appearing up to December 1, 1941, has been examined. Articles which contained only minor evidence as well as those which overlapped or reworked prior authorities have been eliminated. No attempt was made to select the most favorable articles.

Both booklets are available through Lederle representatives, or on request from Lederle Laboratories, Inc., 30 Rockefeller Plaza, New York, N. Y.

American Congress on Obstetrics and Gynecology.

The second annual congress will be held in St. Louis, April 6-10, under the chairmanship of Dr. Fred L. Adair of Chicago.

The morning sessions will be divided into two periods from 9:30 to 11 and 11 to 12. The more formal presentations will appear in the first period. Monday morning at 11 o'clock there will be a general "Obstetric Information Please," based on the well known quiz program and presided over by a moderator and four experts. This will be repeated on Wednesday morning, for shock and hemorrhage, and Friday, on economics. Clinical conferences on genital infections will be held Tuesday morning at 11 and Thursday morning on "How not to treat Carcinoma." During the afternoons various groups will present formal programs devoted to nursing, public health, and hospital administration, among which will be certain combined programs.

A special feature of this Congress will be a daily consultation service at 3:30. About 50 nationally known physicians will make themselves available for fifteen-minute consultations through a registration system by individual practitioners who may desire such advice in their specific problems.

Further information is available at the Central Office of the Congress at 650 Rush Street, Chicago. Hotel reservations should be made directly and at an early date.

Officers in Grand Lodge, A.F. and A.M.

At the 164th annual communication of the Grand Lodge, Ancient Free and Accepted Masons of Virginia, held in Richmond in February, Dr. William R. Weisiger of Richmond was elected deputy grand master, and Dr. R. Sumter Griffith of Waynesboro grand senior steward.

"When Bobby Goes to School" May be Exhibited to the Public by Any Physician.

Under rules laid down by the American Academy of Pediatrics, their new educational-to-the-public film "When Bobby Goes to School" may be exhibited to the public by any licensed physician in the United States. All that is required is that he obtain the endorsement by any officer of his county medical society. Endorsement blanks for this purpose may be obtained on application to the distributor, Mead Johnson & Company, Evansville, Indiana. Such endorsement, however, is not required for showings by licensed physicians to medical groups for the purpose of familiarizing them with the message of the film.

"When Bobby Goes to School" is a 16-mm. sound film, free from advertising, dealing with the health appraisal of the school child, and may be borrowed by physicians without charge or obligation on application to the distributor, Mead Johnson & Company, Evansville, Indiana.

Dr. Edward J. Guilfoyle,

Who practiced for a time in Norfolk, has moved to Palmerton, Pa., where he is junior resident surgeon at Palmerton Hospital.

Dr. C. H. Henderson,

Who has been in practice at Norton, is now at The Episcopal Eye, Ear and Throat Hospital, Washington, D. C., taking a residency in ophthalmology.

Physicians Needed in Panama Canal Zone.

Physicians are urgently needed at the Panama Canal—one of the nation's most vital defense areas, and the U. S. Civil Service Commission has just announced an examination to secure physicians for these important positions. The entrance salary is $4,000 a year, and free transportation by boat or plane is furnished from port of embarkation, the salary beginning on the date of departure from the United States. Applications will be accepted by the Commission in Washington, D. C., until further notice. There is no written test.

Applicants must have been graduated from a Class A medical school with a degree of M. D. subsequent to May 1, 1920, and, in addition, must have had at least one year of experience in a hospital since graduation. They must not have passed their fiftieth birthday; however, because of the arduous duties in the tropical climate, applicants between twenty-five and thirty-five years of age are preferred.

Further information is given in the announcements which may be obtained, with application forms, at any first- or second-class post office, or from the U. S. Civil Service Commission, Washington, D. C.

Meeting of Interest to Industrial Physicians, Surgeons and Hygienists.

The American Association of Industrial Physicians and Surgeons, and the American Industrial Hygiene Association will hold their joint Annual Convention in Cincinnati from April 13 to 17, 1942. A program is in preparation in which important medical and hygienic problems associated with the present huge task of American industry will be presented and discussed in clinics, lectures, symposia, and scientific exhibits. The central purpose of the meeting will be to provide a five-day institute for the interchange and dissemination of information on new problems as well as for the consideration of up-to-date methods of dealing with those that are well known. The industrial physicians have taken responsibility for the program of the first two and one-half days and the hygienists for the remainder of the five days, but most of the subjects chosen for discussion will be of interest not only to physicians, but equally so to industrial engineers, and executives.

The Southeastern Surgical Congress.

The Thirteenth Annual Assembly of the Congress will be held at the Biltmore Hotel, Atlanta, Georgia, on March 9, 10 and 11.

This meeting will carry out the usual form of postgraduate study but the papers are particularly related to the War Emergency. Among the speakers will be Dr. Fred Rankin, President-elect of The American Medical Association, Mr. Paul V. McNutt, Federal Security Administrator, and Colonel Leonard G. Rountree of the Medical Corps of the United States Army. It is also hoped to have some representative of the Procurement and Assignment Bureau in Washington to tell just what the Federal Government expects of the medical profession. Make your hotel and Pullman reservations early.

The Virginia profession should be especially interested in the meeting, as both the president and vice-president this year are Virginians, Dr. Julian L. Rawls of Norfolk being president and Dr. Frank S. Johns of Richmond, vice-president. Address any inquiries to Dr. B. T. Beasley, 701 Hurt Building, Atlanta, Georgia. The detailed program will be mailed about March 1.

Physicians and Surgeons of the New York Polyclinic Honored.

The New York Polyclinic Medical School and Hospital of New York City recently honored twenty-three physicians and surgeons who had contributed most toward its creation, when their portraits were unveiled in the faculty room of the Hospital. A full notice, with names of those thus honored, appears in the Miscellaneous Department of this issue of the MONTHLY.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Bing, R.—Compendium of regional diagnosis in lesions of the brain and spinal cord.
Clapesattle, H. B.—The doctors Mayo.
Dexter & Weiss—Preeclamptic and eclamptic toxemia of pregnancy.
Eberson, F.—The microbe's challenge.
French, S. J.—Torch and crucible.
German, W. McK.—Doctors anonymous.
Gorsch, R. V.—Perineopelvic anatomy from the proctologist point of view.
Gray, G. W.—The advancing front of medicine.
Gregg, A.—The furtherance of medical research.
Grove, R. C.—Sinus.
Hanes, E. L.—The minds and nerves of soldiers.
Hill, J.—Germs and the man.
Hinsie, L. E.—Visual outlines of psychiatry.
Hobart & Melton—A concise pharmacology.
Johnstone, R. T.—Occupational diseases.
Kilduffe-De Bakey—The blood bank and the technique and therapeutics of transfusions.
Leyson, B.—The air raid safety manuel.
Macintosh & Pratt—Essentials of general anaesthesia.
McNally, W. D.—Toxicology.
Medical manual of chemical warfare.
Merchant, T. A.—Laboratory manual for veterinary bacteriology and immunology.
Needham, J. G.—About ourselves.
Ochsner & Mahorner—Varicose veins.
Oliver, W. W.—The man who lived for tomorrow. A biography of William Hallock Park.
Parran & Vonderlehr—Plain words about venereal disease.
Preston, G. H.—Psychiatry for the curious.
Ridley & Sorsby—Modern trends in ophthalmology.
Rood & Lingham—Taking care of the family's health. Bks. I & II.
Sappington, C. O.—Medico-legal phases of occupational diseases.
Seabrook, W.—Doctor Wood: modern wizard of the laboratory.
Snapper, I.—Chinese lessons to western medicine.
Snyder, L. H.—Medical genetics.
Strachey, Mrs. St. Loe—Borrowed children.
Thorington, J.—Refraction of the human eye and methods of estimating, etc.
Towle, C.—Case records.
Voronoff, S.—From cretin to genius.
Witmer, H. L.—Psychatric clinics for children.
Woisman, H.—The vitamin content of meat.
Yearbook of pathology and immunology. 1941.
Youmans, J. B.—Nutritional deficiencies, diagnosis and treatment.
Zilboorg, G.—A history of medical psychology.

Practice for Sale—

In central Virginia, well equipped office, X-ray, B.M.R., Diathermy, etc., one mile from hospitals, available June 1, 1942. $16,000 collections. No ready cash necessary. Modern home near office available. Will introduce. Desire personal interview. Address "Practice", care VIRGINIA MEDICAL MONTHLY.

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Stomach Camera For Sale.

Camera only used a few times and good as new. Will sell for marked reduction. Made by Gastro Photor Company of New York. Address "Camera," care this journal, 1200 East Clay Street, Richmond. *(Adv.)*

For Sale—

Short wave diatherm. In first-class condition. Price reasonable. Address 'Diatherm", care this JOURNAL, 1200 East Clay Street, Richmond. *(Adv.)*

Obituaries

Dr. William Johnston Strother,

Widely-known physician of Culpeper, died on February 15. He was ninety-two years of age and was the oldest alumnus of the Medical College of Virginia, having graduated there in 1871. Dr. Strother had practiced medicine in Culpeper for more than sixty years, was always active in county and state affairs, and was a member of the State Democratic Convention for many years. He had been a member of the Medical Society of Virginia since 1882. His wife and four children survive him.

Resolutions on Dr. Samuel Wilson.

The members of Lynchburg Academy, Inc. wish to record in the minutes of their meeting the following resolutions upon the passing of one of its active members, Dr. Samuel Meredith Wilson.

WHEREAS the Lord in His Wisdom has taken from our midst one of our beloved members of this community, THEREFORE BE IT RESOLVED that the Lynchburg Academy has lost one of its most valued members, who came to this community in 1910 as its first pediatrician, who during his life time worked hard and long in the healing of sick children.

He was ever on call night and day, and on many occasions did not get to bed for two full days at a time; when called he came whether to Elm Avenue or Johnson Street, and further he worked when physically anyone of us would have been in bed. He was charitable and kind and ever ready to extend help to a fellow who needed it. Your committee knows of at least three boys whom he educated.

BE IT FURTHER RESOLVED that a copy of these resolutions be spread upon our minutes and that a copy be sent to his family and to the VIRGINIA MEDICAL MONTHLY.

Respectfully submitted,

JAMES R. GORMAN, *Chairman*,
J. W. DEVINE, SR.
J. W. DEVINE, JR.

Dr. Henry Peronneau Brown,

Widely-known physician and coroner of Campbell County, died January 29 from shock, following an automobile accident. He was fifty-eight years of age and graduated in medicine from the University of Virginia in 1907. He was a leader in civic and educational movements in his county and was for some time a member of the Medical Society of Virginia. His wife and two daughters survive him.

The following resolutions were adopted on the death of Dr. Brown:

The Lynchburg Academy of Medicine, Inc. of which Dr. Henry Peronneau Brown was a popular and honored member, wishes to place on record this memorial as an expression of esteem and a tribute of respect to his memory.

WHEREAS Dr. Henry Peronneau Brown, who has been a beloved co-laborer in the science of healing in Bedford and Campbell Counties, as well as in the city of Lynchburg for nearly thirty-five years, and

WHEREAS our association, both professional and social, has been close and harmonious, we, the members of the Lynchburg Academy of Medicine, recognizing the high order of his services and the fineness of his character, offer the following resolutions:

That in his death on January 29, 1942, Lynchburg and a wide territory in the surrounding counties has suffered a serious loss. He was a general practitioner of the highest order, whose accomplishments were many and great, one truly a family physician whose skill and ability were unquestioned and who during the many years of active service to his patients gave instintingly of his time to rich and poor alike. No distance was too great, no night too dark or stormy to stay his effort. He walked many miles through mud and rain often going as far as possible in his car, or in his buggy, or on horse back before the days of motor transportation.

The qualities of heart, firmness of purpose, beauty of soul, sportsmanship and the other attributes of a Christian gentleman endeared him to those who knew him, the better knowledge bringing the deeper love and appreciation.

RESOLVED that a copy of these resolutions be spread on the minutes of this meeting, a copy be sent to his family and to the VIRGINIA MEDICAL MONTHLY.

Respectfully submitted,

JAMES R. GORMAN, *Chairman*
R. D. CALDWELL
W. T. PUGH

Dr. John Augustus Pollard,

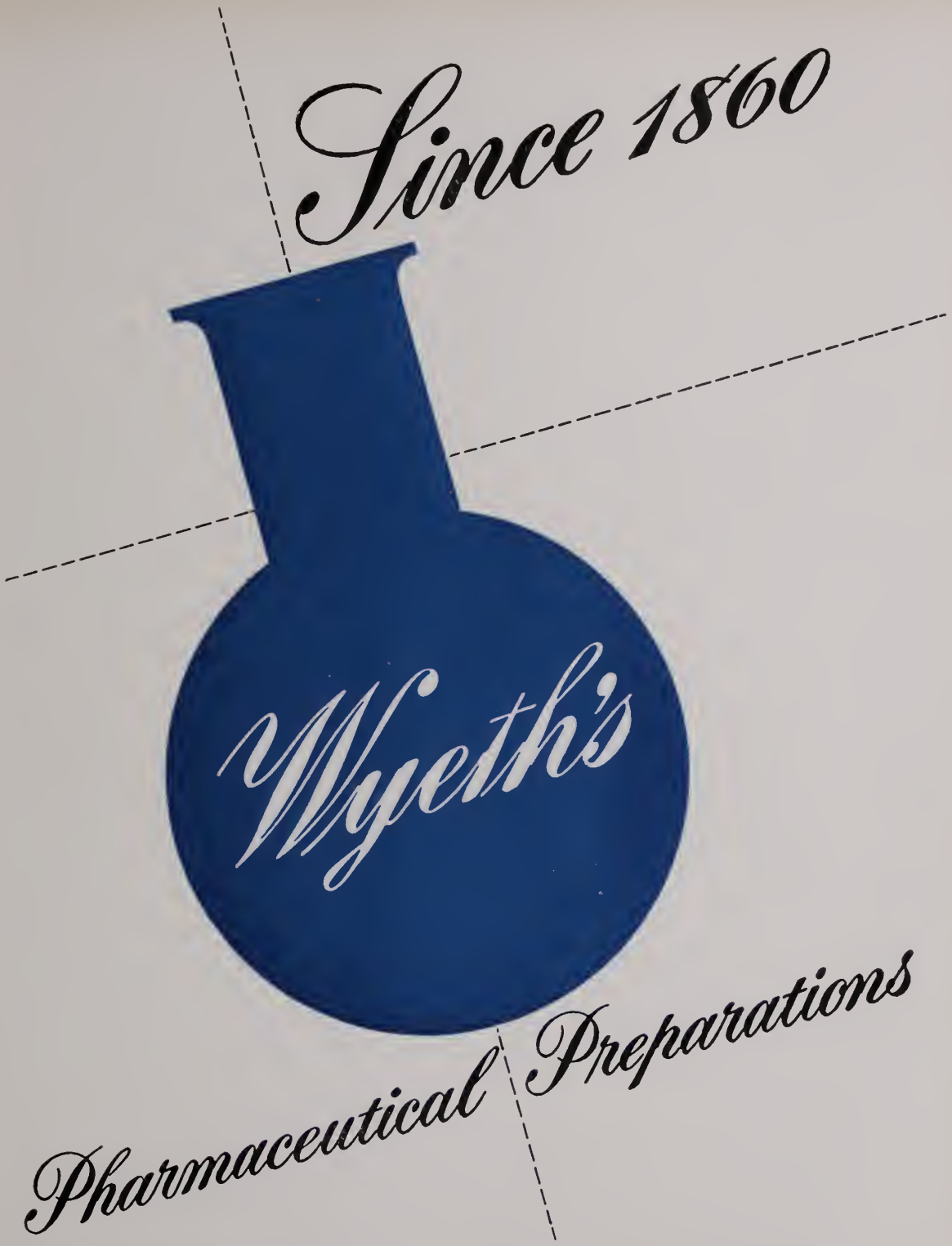
Lynchburg, died January 24, at the age of sixty-eight. He was a graduate in medicine from the University of Louisville in 1894 and had been located in Lynchburg for twenty-two years. Dr. Pollard was formerly a member of the Medical Society of Virginia. His wife and a son survive him.

Dr. C. Curtis Hudson,

Health officer of Greensboro, N. C., died at his home in that city on February 17, following several heart attacks. Dr. Hudson, who was sixty years of age, graduated from the former University College of Medicine in Richmond in 1910. He served as chief health officer of Richmond under Dr. E. C. Levy when the latter was this city's first Director of Public Welfare. After about five years, Dr. Hudson resigned to accept the position as health officer of Greensboro, which position he had held since 1924. His wife and a daugther survive him.

Dr. Ralph L. Daniels,

New Bern, N. C., died February 21, after an illness of several months. He was fifty-four years of age and graduated from the Medical College of Virginia in 1912. During the first World War, he served with the medical corps of the U. S. Army in France and, upon his return to America, took post-graduate work in diseases of the eye, ear, nose and throat before locating in New Bern, where he had since practiced. His wife and a child survive him.



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Annual Meeting—Medical Society of Virginia
Roanoke, October 5, 6 and 7, 1942

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Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 69, No. 4.
WHOLE No. 1078.

RICHMOND, VA., APRIL, 1942.

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Guest Editorial

Should Doctors Tell the Truth?

NOT infrequently in the practice of medicine such a problem as this arises: A woman with a suspicious lump in her breast consults a doctor. She is accompanied by her daughter or a relative or friend who, in a private interview, requests the doctor not to tell the patient that she has cancer if this is the diagnosis, because the patient will be profoundly shocked if she knows the truth. The doctor is urged to inform the patient that the tumor is benign, even if he believes it to be cancer.

Many years ago, the late Dr. Richard C. Cabot conducted an investigation as to the wisdom of truthfully informing patients about their disease. Using as controls patients who were purposely deceived about their condition, he concluded that from the clinical standpoint alone the patients who were told the facts seemed to do better than those who were deceived. If a policy of deception is deliberately pursued, the patient sooner or later usually learns the facts. There can be no intelligent cooperation in the treatment. The relative or friend will unconsciously lose respect for the veracity of the doctor, whether he be family physician or surgeon. If in the future the daughter has a lump in her breast and goes to the same doctor and he tells her that the growth is not malignant, the daughter will think he is deceiving her, too. How is she to know when he is telling the truth?

Thus an increasing distrust of the medical profession is bred. The very basis of scientific work is a search for truth, and doctors in the operating room, or at the bedside, or in the laboratory cannot consistently pursue the search for truth when in their communications with the patients they are purposely suppressing it. How can we expect an intelligent public to respect a profession that deliberately deceives the patient.

How can a patient reach a proper decision as to the adoption of the doctor's advice for treatment of an ailment if the fundamental facts in the case are withheld from the patient? Of course, it is unnecessary to pour brutal truths into a patient's ear unless the patient wishes to know the truth. When the patient's relatives earnestly request that an offensive diagnosis be withheld, the doctor may respect such a request by telling the patient that this information has been imparted to the family and he prefers not to discuss the case with the patient. Then the relatives and friends can do their own lying.

Naturally the doctor should put as optimistic an outlook on any clinical situation as the facts will justify, but this is quite aside from adopting the policy of telling the patient that there is no malignant disease when the doctor believes that the patient has cancer. We owe it to the public and to ourselves to tell the patient the true situation, if the patient requests this information, and to maintain a policy that will not only be worthy of the fullest confidence of the public but at the same time will not tend to weaken our own respect for truth.

An additional incentive for telling the patient the truth is reported by Dr. Elmer Belt, of Los Angeles (*Journal of Urology,* 46:1017-1018, November, 1941). He operated upon a patient for carcinoma of the prostate. The daughter of the patient

requested Dr. Belt not to tell her father that he had cancer, and the doctor complied with this request. The patient later found that he did have carcinoma of the prostate and filed a suit against Dr. Belt for $113,500 for not telling him that he had cancer. The patient had made some financial commitments which he would not have made had he known that death was imminent. The patient said that he knew his daughter was a partner in the false presentation but he could not sue her, so he sued the doctor. The doctor employed the best legal minds to help in the problem, because this point had never before been tried in court. There were extensive preparations for the suit, but the patient died just before the suit came to trial. So this legal point is still pending.

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THE PSYCHOLOGY OF ISOLATIONISM*

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One remembers first the Roman Civilian of old who twitted a military colleague in the Senate Chamber by saying that given an ass laden with two paniers of gold, he could capture any city! and the German expenditure on "propaganda" at this moment is between three and four hundred million dollars a year, spread by a force of not less than 25,000 active agents, trained for the job in special technical schools.

For a score of years in Western Europe and in America there has been bred an antagonism, often bitter and extreme, between the ideas of the moneyed classes and those of the liberal State.

In the days of Britain's Liberal New Deal at the beginning of the Century, Lloyd George was so bitterly hated by the larger tax payers that he once told a story in one of his speeches, of a man walking along the towpath of the Thames who had seen a poor fellow struggling in the river, being carried helplessly to destruction. The man plunged quickly into the water, and reached the drowning man; having carefully turned him on his back and looked at his face to be sure that it was not Lloyd George, he towed him to the bank.

It was said in 1938 that there were no Frenchmen any more—only Fascists with five thousand a year, and Communists with less; and last autumn in Long Island, guests bidden to a private dinner left their host when they found that a prominent New Dealer had also been invited.

Class antagonism, commercial thinking, lack of factual information, and misdirection—often deliberate—by public speakers have together shaken our ability to distinguish essential from unessential values. For example, one hears men debating bitterly the question of "closed and open shop". These men do not realize that next year, enslavement, as in France or Norway, could forbid either; that Freedom is no natural estate, but is the product of a thousand years of battling men. And if it is to be retained, we must battle as they did—and fail not.

Our education is often directed in school books and by public orators to the Service of the Party rather than to Service of the State. Lately, Mr. Hoover ascribed the disorganization of the Continent to the Versailles Treaty in words and arguments identical with Hitler's. But the former President said then not a syllable of the activities of his own Party in 1919, which succeeded in perpetuating all the bad, and sterilizing all the good features of that much discussed and little read document; not a word of the destruction of the Hope of the League, not a word of our repudiation of the promise to aid France for a period of years after the World War should Germany in that time jump again—a ratification which would have cured the French anxiety-neurosis, prevented French alliances with weak States like Poland and Rumania, which sowed dragon's teeth for the present war, and wouldn't have cost Britain or America a nickel.

I heard, with my own ears, Oswald Villard in 1916 say from a public platform that "of course United States Naval and Army officers were in

*Read before American Psychopathological Association, 1941, and before the Mental Hygiene Society of Virginia, October 29, 1941.

favour of entering the war, for that would mean an increase in their personal salaries,"—and how was the public mind ennobled six weeks before the crash, by the President and Secretary of the Treasury of the United States lowering their dignity by assuring the speculative citizens that in their opinion "broker's loans were not at all too high,"—to expand further the great American Bubble.

Such statements and half statements bewilder the public mind and debauch public morals.

United States citizens have gleaned from their school histories the idea that the Monroe Doctrine was a gallant, defiant, chauvinistic statement to all the rest of the World—a mighty David defying Goliath. Not till after the fall of France a year ago was the truth of the origin and effects of the Monroe Doctrine printed where the average citizen could read it—that the Monroe Doctrine was born in Britain, was accepted gladly in 1823 by Monroe, Madison and Jefferson and Adams, and that the rest of Monroe's cabinet were not consulted before it was promulgated. Nor was Congress even informed before its publication, and Jefferson wrote of it that "the only hope of continued existence for a weak young state, situated as was the United States, was an alliance with the strongest friendly naval power, Britain,"—a major American power as well.

That alliance *de facto*—though not *de jure*—gave us one hundred years without a world war, but our citizens were kept from any realistic appreciation of the dynamics and implementing authorities of the situation in the interest of fostering artificially in a recently independent country, a sense of Nationalistic Power.

I read Admiral Mahan's book—"Influence of Sea Power on History"—in 1908, in Britain, but recently I've found many college graduates who not only haven't read it, but haven't even heard of it.—one of the most profoundly powerful books published in this hemisphere in the past hundred years. Yet Mahan makes it clear that the oceans are highways and avenues to the Americas, and only become barriers and protecting walls when determined battling men in ships are put upon them to bar the way to an enemy who would cross them, or who by superior naval power would restrain our trade upon them. Yet this simple fact, accepted as an obvious platitude by every student of war the world over, is denied by each slogan—stuffed ostrich, (a bird which in truth never puts his head in the sand as the fable tells us, but uses quite properly his long, fleet legs to escape from danger by running faster than he can be pursued);—and the Maginot-Ocean-Notion is accepted by masses of people who lack imagination, are without factual knowledge, and at all costs don't want to be disturbed.

"Suggestion" is the quick, uncritical acceptance of an idea which is in consonance with an already established emotional trend. If we hope and are afraid, we over-readily believe in our security. The Germans, early in the war, danced in the streets of Berlin on the false news of an Armistice, they thought their nightmare war was over, peace returned and danger passed. If we hate, we believe almost any evil of those we hate. If we envy, we listen readily to malice; if we love we can only apprehend good things of those we love; and if we are afraid and are lily-livered, we tremble before the radioed voices of Ahriman and the innuendoes and half-threats of the Artificer of Fraud. Our standards of personal dependence on the sturdy virtue of our own opinions have been weakened through the assault on the Majesty of Reason seen in many modern mental activities; for example, we have in Freudian psychology beaten the drum of the Subconscious to drown the still small voice of intellect; in painting, the discipline of drawing has been jettisoned for meaningless crazed abstractions; modern music is either a cacophony of fire-irons descending a nude staircase, or sentimental crooned aphrodisiacs to impotent youth;—and the impertinent idiocies of Gertrude Stein, E. E. Cummings and James Joyce, are less important than are the lack of judgment, lack of independent personal opinion, lack of reverence for the great traditions of language, present in their half-educated and wholly uninstructed admirers. People fear to admire or condemn on their own hook a play or a book until they've read the often foolish judgments of the critics.

Words and threats hold such people in jeopardy and suspense by dint of not being precise,—by joining sugar promises to little Red Riding Hood to threats,—of having the tanks and aircraft "the better to eat you up with, my Dear." Those who have been doing this to us knew and know that both anticipation and memory of an emotion are more real than its reality. They have known that coming events cast a shadow before them more fearful

than themselves; that a Damoclean sword is more terrible than a battle. The production of suspense in war—threats and gay promises, promises and grisly threats—is an ancient weapon. But it is wholly new that the head of a great Power should publicly espouse the lie for twelve great events of international importance—hypocritical promises followed by rape, so that one country after another has been captured at seduced rates.

As Rauschnigg has said—"It has needed all this to make Europe at last accept the truth! that Hitler and his revolutionary movement are the apocalyptic riders of World annihilation,"—to this end, "mesmerize the masses, disintegrate the good elements of national welfare and public order; keep people busy; give them something to think about; startle them; never allow them time for reflection; always lie in wait, ready to pounce; pounce often; always take the initiative and so maintain the lead." Hitler himself in his books says, "The German has not the faintest idea of the way the nation has to be swindled if one wants mass support."

However, Priestly, speaking of his own country, says: "The Nazis have done all possible to paralyze opposition by invading the emotions and the imagination of the more sensitive minds, suggesting a dark host of fears and terrors, creating a smoke-screen of defeatism. But, fortunately, the British are a not very impressionable people. The ordinary folk are probably the hardest to rattle and panic in the world. They are not very imaginative, are free and easy and complacent,"—and by social idiom, one may add, they are not allowed to show fear however much they are afraid.

The majority of Americans have detested Fascism and all it stands for, but apathy long stopped action, indecision stabbed the heart and locked up energy. The adrenalin that would gird us for the battle, in the absence of battle, frightens the nervous system and makes for us a world of jibbering shapes where the witches ride.

What seems to be the weakness in American political life which lowers resistance to the Fascist affront?

1. A relative lack of intellectual comprehension of the issues at stake.

2. Large parts of our people lack active interest in political affairs.

3. Corruption in many municipal offices makes the name "politician" a mere term of abuse.

4. Mal-education in History and almost no education in World Geography.

5. Pressure groups squeezing the Government for privileges.

In speaking of the attitude of many of our privileged fellow citizens,—not all of whom are really malefactors of great wealth,—Buell, in his "Isolated America," quotes a current slang of particular significance—"Don't stick your neck out." These five little words are the core of defeatism, the signs and symptoms of which are egotism, fear, anxiety, panic, lack of self-confidence, lack of self-respect.

If democracy thinks in terms of a scramble for privilege without reciprocal obligation; if our psychology persists through Freud in reducing man to his lowest common denominator, tries to explain his poetry by way of his perversions, and identifies self-indulgence with self-expression, then we have fled the deeply religious idea of Personality and the democratic duty of each man to train himself to betterment.

Rugged sturdiness gets exchanged for indolence, a clean shave for safety razors, and the American pioneer spirit gets swamped in insurance coupons payable to the third and fourth generation of those who've loved us and called us blessed. So there grows an instinct to look to the State to solve every problem and meet every emergency. The other day an over-wrought lady social worker harangued one of our Committees in Washington on the Government's responsibility to provide for the growing army of the old in the manner to which they'd been accustomed. She stunned us by her vehemence into feeling mean and weak, but I struggled a little against subjugation by saying her project of Government paternalism would destroy two virtues, thrift and filial piety, and by asking her if she'd ever seen an ancient Jew begging on the streets. No, for they are one of the three great Races—the Romans, the Chinese and the Jews;—all of these had a Fifth Commandment to reverence and sustain those old ones who had guarded them in youth.

The state is exploited by persons of superficial education, whose youth has been systematically prolonged by the imposition of a scheme of mass education which has sacrificed rigor and quality to mere duration,—and we emphasize our results in this endeavor by dubbing men of forty, "boys." We are lax and sentimental towards crime, and men running for office throw irresponsible promises to

masses and classes—with election speeches having one motif—

> In for a penny, in for a pound,
> It's love that makes the world go round!

So a dull pacifism is bred, with no such rigorous discipline as the Society of Friends demands, arising merely from a vague, unhappy feeling that there's nothing really worth fighting about, not at least to the point of personal discomfort. And the tendency to measure standards wholly in terms of money,—these are trends which Plato describes as infallible signs of decay in societies of free and self-governing men. Plato then laid it down that the inevitable end of decaying democracy is Tyranny,—the most primitive governmental expression of the Wave of the Past.

To these negative expressions of Mass-Fear are gathered also the strangest postive groups—Nazis, Fascists, Bundists and Coughlinites, and, till lately, Communists,—all happily singing different words with the same tune from the same platform. When crowds are gathered together, the sphere of clear thinking and perception in each individual becomes narrowed, and, instead, instinctive actions and impulsive reactions prevail. So mass emotion and subordination of thought are induced by diligent emotional suggestion, especially if the dose have as vehicle such secondary aids as repetition, blaring music, color, flags and rhythm.

The process may rapidly become pathological, so that neurosis, hysteria, mass psychosis, and even treason, may develop. These rules of psycho-dynamics are well established and have had in the Sportspalast at Nuremberg, in Carnegie Hall and in Manhattan Center, their practical application and fulfillment.

Thus come collective delusions and induced insanity,—well defined entities in psychopathology. Mass reactions may develop by glorificataion and idolizing, each mob unit merging himself hermaphroditically in the Emperor-God, the oldest pagan worship. For this there are needed preparation, management, myth formation, tricks and stereotyped oratory. So the perfect little Fuehrer has been found for us—one who demands, on the heels of a national election, that by dynamic revolution, for there is no other way—we find New Leadership, and another horse of another color—one perhaps with a brown saddle cloth, a black shirt against the cold, The Rising Sun on his forelock, and a swastika on his tail! It can't be for nothing that such a man had to make a mechanical heart for himself, for his visceral lack of one must irk. A case of identification with his father, lacking the maturity of mind to appreciate the father's idealism and selflessness. Symbolized in the boom period of distorted values as the ideal American "boy," he awoke to find himself famous and swept overnight into Godhood. Tragic events kept him a world figure,—and perhaps his personal hurt caused him to resent American institutions as a whole. No manly appeal to his countrymen for the quiet life was made. Rather came a furtive escape in ill-concealed anonymity. He asked England for Peace;—he got it to the overdone point of being almost ignored.

Then to Germany,—where adulation, deference, and decorated publicity again came to him,—to his quite evident satisfaction. This man's thinking has never become adult,—his speeches show it, but his face shows it more. A man of forty odd, a man of sorrows and acquainted with grief, with not a line of suffering on his face of twenty-two;—a case of retarded growth, of puerile humor, cold as a stone; with a vaulting ambition, forgivable only in one so young.

A man of huge fortune told me the other day that "everything would be all right, after the fighting," which he dismissed as casually as he might a dog scrap—everything would be much the same (i.e., he'd still have his world market for his products and an annual salary of $475,000) "for there were two men who'd sit down and fix things, men who understood each other." I couldn't think of any man in England likely to sit down at a table "to fix things" with Hitler or his jackal Himmler; so asked who these two fixers might be, and learned they were no other than Schacht and Montague Norman. Our talk ended by my explosion, "Good God, and you'd drop the future of the human race into the lap of a couple of bankers!" This man was an idealist isolationist on his own behalf whom Plato would have entirely understood.

An elderly lady of lineage consulted me lately, worn out by a rally of her parochial and much duped friends. Proudly, she showed me a picture of herself shaking hands with Senator Wheeler; and, with no insight at all, went on to explain how all her life she'd been so afraid of things. "What sort of things," I asked. "Oh, everything, dogs and cats—I never could have a pet and I never

went into the Sea in Summer, for I was scared of the water."

So, the psychic and glandular factors making for this form of behavior cannot be uniform. They produce different types, having a common immediate aim and more remote individual ambitions, expectations and satisfactions. I suspect the Ariadne's thread that runs through the labyrinth of their minds and feelings is some form of Hatred—not a love of country, but a hating of something or someone in that country, or in another country which they envy;—and no good can be builded of these bricks: Envy, Hatred, Mammon, and Fear.

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INFECTIOUS MONONUCLEOSIS: UNUSUAL MANIFESTATIONS*

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Infectious mononucleosis or glandular fever was first described by Pfeiffer in 1889.[1] Since that time many different types of the disease have been recorded. The typical picture of fever, sore throat, enlarged lymph nodes, splenomegaly and lymphocytosis occurring in children or young adults is common and should be easily recognized. In many cases, however, the diagnosis is difficult on account of the predominance of some of the less common manifestations of the disease. Because these atypical cases are not unusual and because they are frequently confused with some other more serious condition it seems to us worthwhile to record the following observations.

The extensive literature on infectious mononucleosis has recently been reviewed elsewhere.[4] No attempt will be made here to discuss the natural history or course of the disease, although a few observations on a series of fifty-seven patients will be presented. The purpose of this paper is to emphasize the varied clinical picture of infectious mononucleosis. A detailed report will be made of eight patients who were of particular interest because they developed some unusual manifestation of this disease or presented problems in differential diagnosis.

REPORTS OF CASES

CASE 1.—R. S. C., a 19-year-old white male student, was admitted to the University Hospital complaining of a head cold of two days' duration, headache, sore throat, and cough. The initial examination was negative except for a temperature of 103 degrees, and moderate injection of the throat. The leukocyte count was 3,600; a blood smear showed a moderate increase in band cells. The tentative diagnosis was acute respiratory infection.

Details of the temperature curve and blood counts are shown in Chart I. On the third day after admission the appearance of the throat seemed insufficient to explain the condition of the patient, who was acutely ill. The lack of a definite diagnosis was a source of some concern. The blood smear was repeated and many abnormal lymphocytes were found, suggesting for the first time a diagnosis of infectious mononucleosis. Six days after onset, the cervical and axillary lymph nodes became enlarged. The appearance of the blood smear now left little doubt as to the diagnosis. The heterophil agglutination reaction, at first negative, was positive when

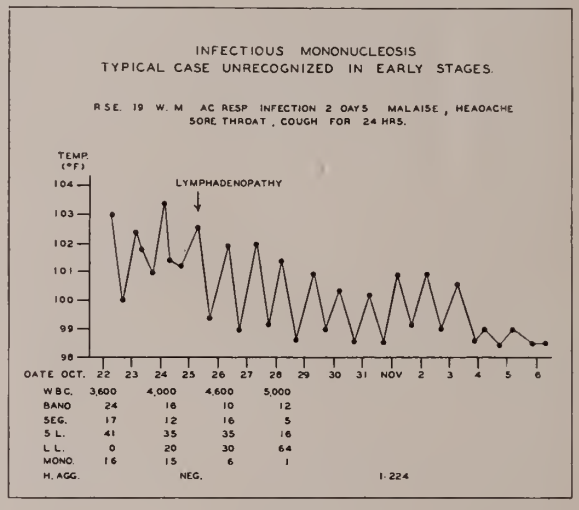
INFECTIOUS MONONUCLEOSIS
TYPICAL CASE UNRECOGNIZED IN EARLY STAGES.
R.S.E. 19 W. M AC RESP. INFECTION 2 DAYS MALAISE, HEADACHE
SORE THROAT, COUGH FOR 24 HRS.
TEMP. (°F.)
LYMPHADENOPATHY
104
103
102
101
100
99
98
DATE OCT. 22 23 24 25 26 27 28 29 30 31 NOV 2 3 4 5 6
W.B.C. 3,600 4,000 4,600 5,000
BAND 24 16 10 12
SEG. 17 12 16 5
S.L. 41 35 35 16
L.L. 0 20 30 64
MONO. 16 15 6 1
H. AGG. NEG. 1:224

Chart I

*From the Department of Student Health and the Department of Internal Medicine, University of Virginia.

Read at the annual meeting of the Medical Society of Virginia, at Virginia Beach, October 6-8, 1941.

repeated on the thirteenth day of the illness. Recovery was uneventful.

Comment.—This case probably represents the usual sequence of events in infectious mononucleosis, but it is unusual because all the special features of the disease were absent when the patient was first seen. Leukopenia and increase in band cells are known to occur early, but in the absence of lymphadenopathy and abnormal leukocytes, these findings are not especially suggestive of infectious mononucleosis. In this patient the changes in the peripheral blood preceded the development of lymphadenopathy and the positive agglutination. The heterophil agglutination is usually positive when first performed. Occasionally, as in this patient, it may not become positive until later and should always be repeated in negative or doubtful instances.

The introduction of the heterophil agglutination reaction by Paul and Bunnel[3] in 1932 was a great advance in the diagnosis of infectious mononucleosis. It has been reported positive in as high as 92 per cent in one series of patients and in as low as 50 per cent in another.[4] In our present series the heterophil agglutination reaction was positive in forty-four patients (83%); in nine cases (17%) the reaction was negative. In four cases it was not performed. In only three instances did it become positive after an initial negative test. These findings agree with the observation of other writers that in at least 90 per cent[4] of cases of infectious mononucleosis the heterophil reaction will be positive when first performed, if it is going to be positive at all.

CASE 2.—N. R., an 18-year-old student nurse, was admitted to the hospital with a history of having had headache, malaise, aching joints, and shaking chills for forty-eight hours. Slight sore throat developed on the day of admission. At the time of the initial examination the patient appeared acutely ill. The temperature was 103 degrees; the pulse 120. The pharynx was moderately inflamed and the anterior cervical glands were enlarged. The remainder of the examination was essentially negative. Laboratory studies revealed a leukocyte count of 20,000 with 8 per cent band cells and 84 per cent segmented cells. On the night of admission the temperature dropped to 98.4 degrees but on the next day suddenly rose to 103.8 degrees following a shaking chill. The physical examination was unchanged but a second leukocyte count revealed a drop to 3,800, with 22 per cent bands and 34 per cent segmented cells. The patient was delirious, had several nosebleeds and appeared dangerously ill. Localizing signs of infection had not appeared and the diagnosis was obscure. Septicemia with toxic granulocytopenia was considered.

On the third day after admission the patient continued acutely ill with chills and a septic type of fever. Chest x-rays were normal. Blood cultures had shown no growth of organisms. The leukocyte count had fallen to 3,000. Blood smears at this time revealed 18 per cent "large pathologic" lymphocytes. A diagnosis of infectious mononucleosis was seriously considered for the first time. The heterophil agglutination reaction was positive in dilutions of 1:112. By the seventh day of the disease, when the patient was greatly improved, submaxillary, posterior cervical, and axillary lymph nodes became enlarged. At this time heterophil agglutination was positive in dilutions of 1:224. The patient recovered uneventfully.

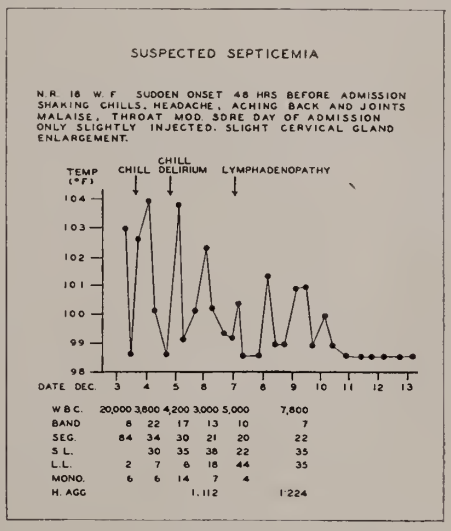
SUSPECTED SEPTICEMIA
N.R. 18 W. F. SUDDEN ONSET 48 HRS BEFORE ADMISSION SHAKING CHILLS, HEADACHE, ACHING BACK AND JOINTS MALAISE, THROAT MOD. SORE DAY OF ADMISSION ONLY SLIGHTLY INJECTED. SLIGHT CERVICAL GLAND ENLARGEMENT.
TEMP (°F)
CHILL
CHILL, DELIRIUM
LYMPHADENOPATHY
104
103
102
101
100
99
98
DATE DEC. 3 4 5 6 7 8 9 10 11 12 13
W.B.C. 20,000 3,800 4,200 3,000 5,000 7,800
BAND 8 22 17 13 10 7
SEG. 84 34 30 21 20 22
S.L. 30 35 38 22 35
L.L. 2 7 8 18 44 35
MONO. 6 6 14 7 4
H. AGG 1:112 1:224

Chart II

Comment.—The outstanding feature of this case was the septic reaction, characterized by fever, chills, delirium, and the sudden development of a leukopenia which suggested septicemia. At times the appearance of the patient caused grave concern. Infectious mononucleosis was not suggested by the clinical picture or blood studies until the fifth day after onset when the diagnosis was made after examination of a third blood smear.

The changes occurring in the peripheral blood in this disease have been adequately described by

Downey[5] and many other writers. It is perhaps worth emphasizing that in 68 per cent of the cases in our series the band cells were increased to more than 6 per cent at the time of the initial count. In many instances the abnormal lymphocytes that are considered characteristic of this disease did not appear until the patient had been under observation for several days. In 10 per cent of the patients leukocyte counts of less than 4,000 cu. mm. were encountered.

The epistaxis which occurred in this patient is the commonest of the hemorrhaghic phenomena occurring in the disease. Bernstein[4] mentioned cases with purpura, bleeding gums, and even thrombocytopenia, but these manifestations are very unusual.

CASE 3.—J. G. K., a 17-year-old student, was first seen at the Department of Student Health on April 27, 1940, complaining of a swollen gland in the left groin. This had been present for two days. Examination of the left leg and foot was negative. The superficial lymph nodes were normal except for a tender gland 2 x 3 cm. in the left inguinal region. The liver and spleen were not palpable. Blood studies revealed: Hb. of 16 gms., RBC 4.8 million, WBC 6,200. The smear showed 8 per cent band cells, 30 per cent segmented cells, 25 per cent large lymphocytes, and 37 per cent small lymphocytes. A diagnosis of inguinal lymphadenitis, cause unknown, was made and the patient was advised to apply local heat. He returned five days later feeling only slightly improved. At this time the inguinal nodes were less tender, but the left cervical and left axillary nodes were enlarged. A leukocyte count was 10,200 cu. mm., and smears of the blood showed 3 per cent band cells, 15 per cent segmented cells, 36 per cent large mononuclear cells, 39 per cent small lymphocytes, and 3 per cent eosinophiles. Many of the large mononuclear cells were the large abnormal lymphocytes commonly seen in infectious mononucleosis. Heterophil agglutination was positive in a dilution of 1:224. On May 6th, eleven days after the inguinal node was first noticed, the patient developed sore throat and earache and further enlargement of the cervical and axillary nodes. On May 8, he was much improved, but the inguinal nodes were more enlarged. On May 18 the patient felt well, all the nodes were smaller, and the heterophil agglutination reaction was positive in a dilution of 1:448. By May 24, the nodes had returned to normal size. Details of the blood count, agglutinations, and lymphadenopathy are shown in Chart III.

Comment.—The occurrence of localized inguinal adenitis did not suggest infectious mononucleosis when this patient was first seen, but a diagnosis could probably have been made at that time from the blood smear. Although the cervical glands are the most frequently involved, any group of nodes may form the presenting sign. An enlargement of the superficial lymph nodes occurs at some time during the course of the disease in nearly every patient with infectious mononucleosis. Enlarged glands may precede fever by weeks, or may not develop until after twenty-five days of fever.[4] Their duration may vary from a day or two to more than a year.

INGUINAL ADENITIS

J K 17 W M PAINFUL TENDER SWOLLEN NODE IN LEFT GROIN 2 DAYS DURATION. GEN LYMPHADENOPATHY DEVELOPED 7 DAYS AFTER ONSET. SORE THROAT 12 DAYS AFTER ONSET. LIVER AND SPLEEN NOT FELT.

DATE	WBC	DIFFERENTIAL COUNT					HETROPHIL AGG	LYMPH NODES								SYMPT.
		BAND	SEG	S L	LL	M		ING		CERV		AX		EPIT.		
								R	L	R	L	R	L	R	L	
APR. 27	6,200	8	30	37	25	0		+	+++	±	±	±	±	0	0	PAIN GROIN
29																SAME
MAY 2	10,200	3	15	49	36	0	1:224	+	+++	+	++	+	++	0	0	SL IMPR
6		8	21	31	30	8		+	+++	+++	+++	++	++	0	0	GROIN IMPR THROAT SORE
8	11,000	14	13	40	25	2	1:448	+	++++	+++	+++	+++	+++	0	0	THROAT MUCH IMPR
10																WELL
17							1:448	±	+++	++	+++	+++	+++	0	0	WELL
24							1:112	±	±	±	±	±	±	0	0	WELL

Chart III

The benign course of the disease in this patient was in sharp contrast to that in the preceding case.

CASE 4.—D. S., a 20-year-old student, was admitted to the hospital on May 16, 1940, complaining of chilly sensations, headache, stiff neck, and fever. These symptoms had been present for five days. Ten days before admission he was bitten on the neck by a tick. The admission temperature was 102.4 degrees; pulse 100. Examination at this time revealed puffiness under both eyes, a moderately inflamed pharynx, and one purpuric spot on the left upper arm. The lymph nodes were not sig-

nificantly enlarged, and the spleen was not palpable. Laboratory studies revealed: RBC. 5.2 million; WBC 5,200; a smear showed 13 per cent band cells, 28 per cent segmented cells, 5 per cent large lymphocytes, 41 per cent small lymphocytes, 11 per cent monocytes, and 2 per cent eosinophiles. The tentative diagnosis at the time of admission was acute pharyngitis. An irregular type of fever, headache, and aching neck continued, and the spleen became palpable. Because of the history of tick bite, specific agglutinations were obtained; Proteus X-19 was positive in dilutions of 1:640, heterophil agglutination was positive in dilutions of 1:224; B Tularense, Proteus X-20, and Proteus K-0 were negative. A few days later the diagnosis seemed settled when the blood smear became typical of infectious mononucleosis. On the ninth day after admission, heterophil agglutination was positive in dilutions of 1:448, Proteus K-0, 1:640, Proteus X-19, 1:40, and Proteus X-20 was negative. The patient felt well and was discharged on the tenth day.

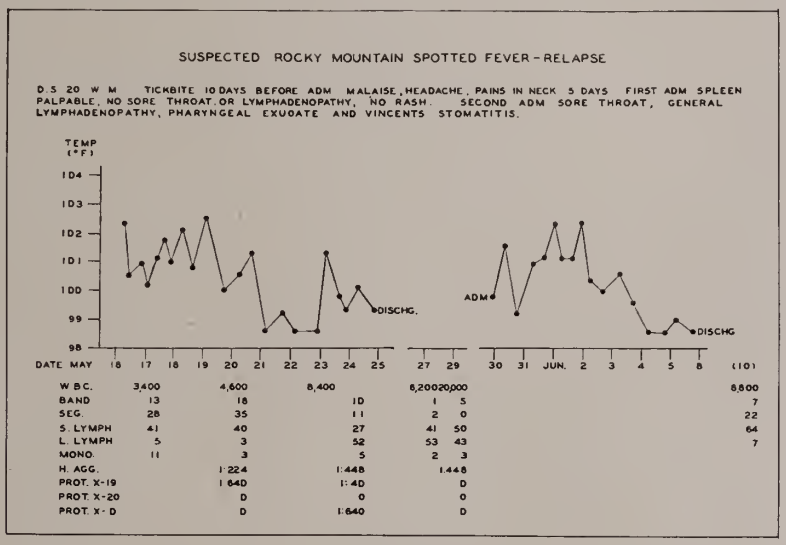
SUSPECTED ROCKY MOUNTAIN SPOTTED FEVER - RELAPSE
D.S. 20 W M TICKBITE 10 DAYS BEFORE ADM MALAISE, HEADACHE, PAINS IN NECK 5 DAYS FIRST ADM SPLEEN PALPABLE, NO SORE THROAT OR LYMPHADENOPATHY, NO RASH. SECOND ADM SORE THROAT, GENERAL LYMPHADENOPATHY, PHARYNGEAL EXUDATE AND VINCENTS STOMATITIS.
TEMP (°F)
104
103
102
101
100
99
98
DISCHG.
ADM
DISCHG
DATE MAY 16 17 18 19 20 21 22 23 24 25 27 29 30 31 JUN. 2 3 4 5 8 (10)
W.B.C. 3,400 4,600 8,400 6,200 20,000 8,800
BAND 13 18 10 1 5 7
SEG. 28 35 11 2 0 22
S. LYMPH 41 40 27 41 50 64
L. LYMPH 5 3 52 53 43 7
MONO. 11 3 5 2 3
H. AGG. 1:224 1:448 1:448
PROT. X-19 1:640 1:40 0
PROT. X-20 0 0 0
PROT. X-0 0 1:640 0

Chart IV

Comment.—This case has many interesting features. Because of the history of tick bite in the late spring, unexplained fever, headache, and palpable spleen, Rocky Mountain Spotted Fever was suspected. The results of the agglutination reactions were confusing, both Proteus X-19 and the heterophil reaction being positive. The subsequent clinical course, the appearance of the blood smears, and the increasing heterophil reaction made a positive diagnosis of infectious mononucleosis. The bizarre and inconsistent agglutination reactions with the Proteus organisms and the absence of rash would seem to rule out a co-existent Spotted Fever. The most likely explanation is that a single infection, infectious mononucleosis, was present, and multiple agglutination responses occurred. Bernstein,[6] in 1934, reported positive agglutinations for B. Abortus, B. paratyphosus B., and B. Suipestifer II in patients with infectious mononucleosis.

Another interesting feature in this case was the extreme granulocytopenia that developed on the thirteenth day after onset. The leukocyte count was 6,200 cu. mm., and the smear showed only 1 per cent band cells and 2 per cent segmented cells; platelets, erythrocytes, and hemoglobin were unchanged. Two days later the leukocyte count rose to 20,000, with 5 per cent band cells and no segmented forms. Several areas of exudate on the pharynx contained both polymorphonuclear leukocytes and lymphocytes, and at no time did the appearance of the throat suggest agranulocytic angina. Vincent's infection, as seen in this patient, is very common in infectious mononucleosis.

After an apparent recovery, the patient had a

relapse within a week, a rather common occurrence according to Bernstein.[4] In this instance the relapse was much more painful than the original episode.

CASE 5.—E. C., a 24-year-old white male, was referred to the hospital with a diagnosis of acute appendicitis. He gave a history of dull persistent right-lower-quadrant pain of one week's duration.

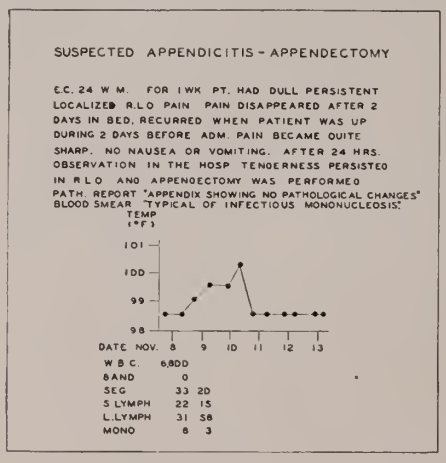
SUSPECTED APPENDICITIS - APPENDECTOMY
E.C. 24 W M. FOR 1 WK PT. HAD DULL PERSISTENT LOCALIZED R.L.Q PAIN PAIN DISAPPEARED AFTER 2 DAYS IN BED, RECURRED WHEN PATIENT WAS UP DURING 2 DAYS BEFORE ADM. PAIN BECAME QUITE SHARP. NO NAUSEA OR VOMITING. AFTER 24 HRS. OBSERVATION IN THE HOSP TENDERNESS PERSISTED IN R.L.Q AND APPENDECTOMY WAS PERFORMED
PATH. REPORT "APPENDIX SHOWING NO PATHOLOGICAL CHANGES"
BLOOD SMEAR "TYPICAL OF INFECTIOUS MONONUCLEOSIS"
TEMP (°F)
101
100
99
98
DATE NOV. 8 9 10 11 12 13
W B C. 6,800
8 AND 0
SEG 33 20
S LYMPH 22 15
L.LYMPH 31 58
MONO 8 3

Chart V

The pain was slight while the patient was in bed, but became sharp and at times quite severe when he was up and about. He gave no history of nausea, vomiting, or diarrhea. On admission the temperature was 98.6, pulse 80. Examination was negative except for tenderness and slight spasm localized in the right lower abdominal quadrant. Laboratory studies revealed a negative urine and a leukocyte count of 6,800. The blood smear showed 33 per cent segmented cells, 22 per cent small lymphocytes, and 35 per cent large lymphocytes, about one-half of the latter being abnormal cells. On the following day the blood smear contained 20 per cent segmented cells, 15 per cent small lymphocytes, and 65 per cent large lymphocytes; about two-thirds of the large lymphocytes were the mature abnormal cells commonly seen in infectious mononucleosis. Abdominal pain and tenderness persisted, and appendectomy was performed because it was felt that in view of the findings any other course was unsafe. Recovery was uneventful. Pathological reports showed a normal appendix. Heterophil agglutinations were not obtained.

Comment.—Removal of a normal appendix is hardly unusual enough to warrant a report. In this instance the clinical picture was not typical of appendicitis, yet appendectomy was performed because it was thought that the appendix was the most likely offender. Although the superficial lymph nodes were not enlarged, more serious consideration of the blood smear would possibly have prevented an operation. Abdominal pain sometimes occurs in infectious mononucleosis and is usually attributed to enlargement of intra-abdominal nodes. These have been palpated in some cases. At the time of operation no enlarged glands were noted.

CASE 6.—A. F., a 29-year-old white male, was admitted to the hospital complaining of severe headache and fever of three days' duration. The admission temperature was 103 degrees. Physical examination was essentially negative. A leukocyte count was 6,800 and the blood smear showed 23 per cent band cells, 31 per cent segmented cells, 40 per cent small lymphocytes and 6 per cent monocytes. Severe headache continued. The patient became very drowsy and was aroused only with difficulty. Neurological examinations were repeatedly negative. The temperature curve is shown in Chart VI. Encephalitis was suspected, and lumbar puncture was performed on the fourth day after admission. The fluid was clear but contained 26 cells, 24 of which were lymphocytes. The spinal fluid sugar was normal, globulin increased, and serology negative. Chlorides were reported as 457 mgm. A diagnosis of encephalitis, cause unknown, was made and a guarded prognosis given. Two days later a cervical node became enlarged. The patient began to improve. Heterophil agglutination was performed

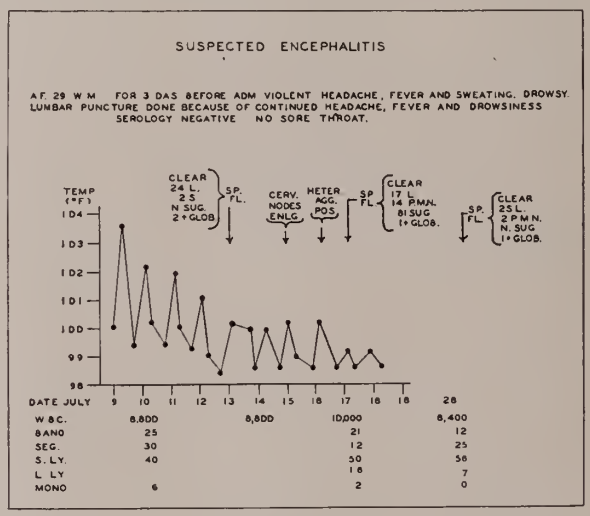
SUSPECTED ENCEPHALITIS
A.F. 29 W M FOR 3 DAS BEFORE ADM VIOLENT HEADACHE, FEVER AND SWEATING. DROWSY. LUMBAR PUNCTURE DONE BECAUSE OF CONTINUED HEADACHE, FEVER AND DROWSINESS SEROLOGY NEGATIVE NO SORE THROAT.
TEMP (°F)
104
103
102
101
100
99
98
CLEAR 24 L. 25 N SUG. 2+ GLOB.
SP. FL.
CERV. NODES ENLG.
HETER AGG. POS.
SP FL
CLEAR 17 L 14 PMN. 81 SUG 1+ GLOB.
SP. FL.
CLEAR 25 L. 2 PMN. N. SUG 1+ GLOB.
DATE JULY 9 10 11 12 13 14 15 16 17 18 19 28
W B C. 8,800 8,800 10,000 6,400
8 AND 25 21 12
SEG. 30 12 25
S. LY. 40 50 56
L LY 16 7
MONO 6 2 0

Chart VI

and found to be positive. The blood smear was repeated and found to be typical of infectious mononucleosis. The patient made an uneventful recovery; when last seen two weeks after initial lumbar puncture, the spinal fluid still showed 27 cells.

Comment.—In this case fever, headache, and marked drowsiness suggested the diagnosis of some type of encephalitis and lumbar puncture seemed to confirm the diagnosis. The appearance of moderate cervical lymphatic enlargement two days later led to the probable diagnosis by means of the heterophil agglutination and further blood studies. Had the adenopathy not developed it is quite likely the correct diagnosis would not have been made.

Central nervous system abnormalities in infectious mononucleosis were first described by Epstein and Dameshek.[7] Headache, blurred vision, convulsions, stupor, coma, stiff neck, positive Kernig and Babinski signs have been reported. The pleocytosis consists of mononuclear cells and is usually less than 200 but may be as high as 1,000. The spinal fluid sugar is normal, protein may be increased, and the Pandy test is strongly positive.[4] Infectious mononucleosis should be considered before making a diagnosis of encephalitis or "lymphocytic meningitis".

CASE 7.—W. A., a 21-year old student, was admitted to the hospital complaining of malaise, sore throat, fever, and chilly sensations. These symptoms had been present for a week. The admission temperature was 103.2; pulse 110. Examination revealed a reddened pharynx; there were enlarged tender glands in the anterior and posterior cervical region. Blood studies showed: hemoglobin 85 per cent; red blood count of 4.2 million; leukocyte count 6,000. The smear showed 15 per cent bands, 8 per cent segmented, 26 per cent large abnormal lymphocytes, 45 per cent small lymphocytes, and 6 per cent monocytes. Heterophil agglutination was positive in dilutions of 1:224. On the day after admission the spleen was palpable and a rash consisting of discrete pinkish brown macules appeared over the anterior and posterior trunk. On the second day the patient felt improved, the rash had begun to fade, but a definite jaundice was noticed for the first time. On the following day the Icteric index was 58 and the blood cholesterol 69 mg. per 100 cc. A stool contained the normal amount of changed bile. Examination of the urine gave a "3+" reaction for bilirubin and "2+" reaction for urobilin. The stools continued to contain the normal amount of changed bile during the remainder of the time the patient was in the hospital. The jaundice gradually decreased and had disappeared by the tenth day. At this time the urine contained no bilirubin, the icteric index was 15 and the blood cholesterol was 50 mgs. per 100 c. c. The patient was discharged from the hospital. Eight days later he had entirely recovered from his sickness. The icteric index was now 14 and the blood cholesterol was 199 mgs. per 100 c. c.

Comment.—In this case the diagnosis was evident at the time of admission. Most interesting was the occurrence of jaundice which is a well recog-

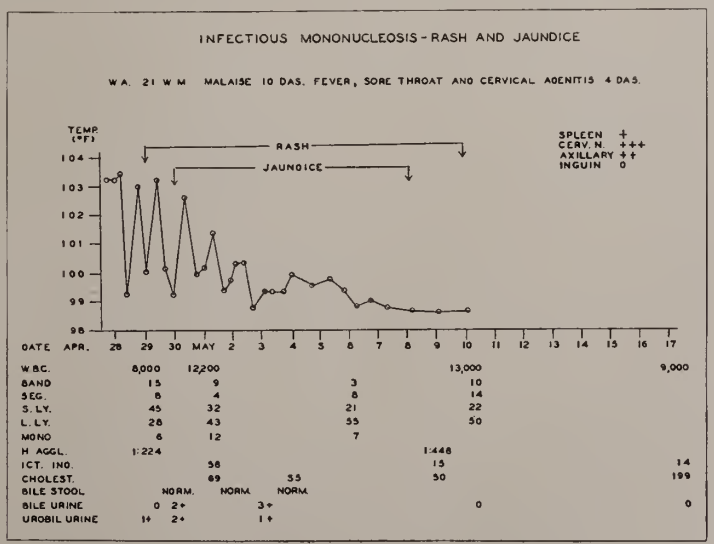
INFECTIOUS MONONUCLEOSIS - RASH AND JAUNDICE
W.A. 21 W M MALAISE 10 DAS. FEVER, SORE THROAT AND CERVICAL ADENITIS 4 DAS.
TEMP (°F)
RASH
JAUNDICE
SPLEEN +
CERV. N. +++
AXILLARY ++
INGUIN 0
DATE APR. 28 29 30 MAY 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
W.B.C. 8,000 12,200 13,000 9,000
BAND 15 9 3 10
SEG. 8 4 8 14
S. LY. 45 32 21 22
L. LY. 28 43 55 50
MONO 6 12 7
H. AGGL. 1:224 1:448
ICT. IND. 58 15 14
CHOLEST. 69 55 50 199
BILE STOOL NORM. NORM. NORM.
BILE URINE 0 2+ 3+ 0 0
UROBIL URINE 1+ 2+ 1+

Chart VII

nized but unusual development in patients with infectious mononucleosis. It occurred twice in twenty-eight cases reported by Stuart,[8] once in Bernstein's series of sixty-five cases[4] and only once in this series of fifty patients. The first observation of jaundice in infectious mononucleosis was reported by Mackey and Wakefield.[9] They interpreted the dark urine and clay-colored stools as indicating obstructive jaundice, most likely due to occlusion of the common duct by lymph node enlargement. In a case mentioned by Stuart the factor of infectious hepatitis rather than obstruction was suggested by a biphasic Van den Bergh reaction. In the patient reported above the jaundice was associated with bile in the urine and likewise in the stool, a high icteric index, and low cholesterol. These findings suggest that the jaundice was the result of hepatitis rather than common duct obstruction.

This patient also developed a morbilliform rash with a temporary residual pigmentation which lasted about twelve days. Rashes are not uncommon in infectious mononucleosis and many types have been described. Eruptions have been described as purpuric, typhoid-like, morbilliform, scarlatiniform, typhuslike, urticarial, vesicular, and of the type characteristic of erythema nodosum.

CASE 8.—R. C., a 20-year-old white male, was twice admitted to the hospital; on July 29, 1939, and on August 3, 1940. The temperature curves and blood studies on both admissions are shown in Chart VIII. On the first admission, the heterophil agglutination was negative, but the clinical course and blood smear seemed characteristic enough to establish the diagnosis of infectious mononucleosis. On the second admission, both the blood smear and the heterophil agglutination were considered diagnostic.

Comment.—This patient is of interest mainly due to the occurrence of two attacks of mononucleosis (about one year apart). The symptoms were so similar that at the time of the second admission the patient volunteered the opinion that he must be suffering from the same disease that he had the year previously. Although these symptoms and the glandular involvement were very similar in the two attacks the second was more protracted and more severe. Recurrences are rare in infectious mononucleosis, but several instances are on record.[4]

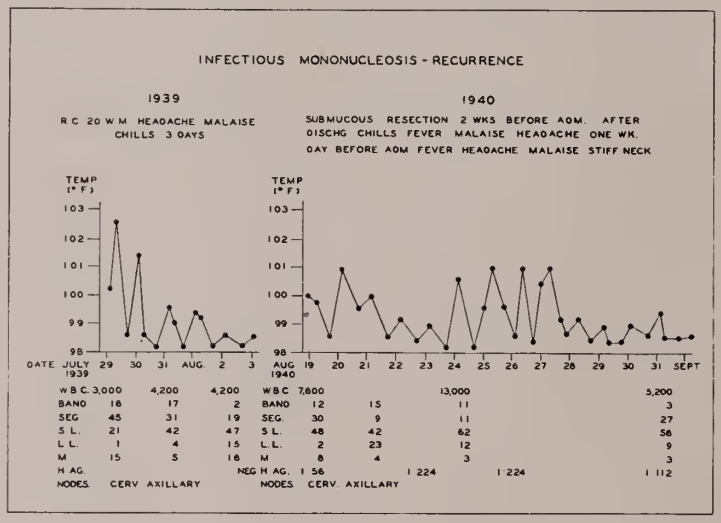
INFECTIOUS MONONUCLEOSIS - RECURRENCE
1939
R C 20 W M HEADACHE MALAISE CHILLS 3 DAYS
1940
SUBMUCOUS RESECTION 2 WKS BEFORE ADM. AFTER DISCHG CHILLS FEVER MALAISE HEADACHE ONE WK. DAY BEFORE ADM FEVER HEADACHE MALAISE STIFF NECK
TEMP (° F)
DATE JULY 29 30 31 AUG. 2 3 1939
AUG 19 20 21 22 23 24 25 26 27 28 29 30 31 SEPT 1940
WBC 3,000 4,200 4,200
BANO 18 17 2
SEG 45 31 19
S L. 21 42 47
L L. 1 4 15
M 15 5 18
H AG. NEG
NODES. CERV AXILLARY
WBC 7,600 13,000 5,200
BANO 12 15 11 3
SEG. 30 9 11 27
S L. 48 42 62 58
L.L. 2 23 12 9
M 8 4 3 3
H AG. 1 56 1 224 1 224 1 112
NODES. CERV. AXILLARY

Chart VIII

DISCUSSION

The clinical course of infectious mononucleosis suggests an infectious origin, but an etiological agent has not been isolated. The treatment is entirely symptomatic. The sulfonamide drugs were used upon a few patients in this series, but apparently had no effect on the course of the disease. Although patients may appear seriously ill at times, death due to infectious mononucleosis has not been reported.

Because of the many clinical manifestations the disease may present, some more serious disorder is frequently suspected. Although the diagnosis often cannot be established until the patient has been under observation for several days, the difficulty in diagnosis is usually due to a failure to consider infectious mononucleosis as a possibility. If the

disease is suspected diagnosis is usually not difficult because the characteristic blood picture and positive heterophil agglutination are generally present when the patient first consults the physician. A positive diagnosis is important for it not only removes uncertainty as to the nature of the illness but also gives basis for invariably good prognosis. Infectious mononucleosis should be considered in all patients with unexplained fever, Vincent's angina, atypical influenza, glandular enlargement in any location, and unusual forms of encephalitis and lymphocytic meningitis. It should likewise be considered in patients with unexplained lymphocytosis, false positive Wassermann reactions, jaundice, and unexplained abdominal pain.

SUMMARY AND CONCLUSIONS

1. A study of fifty-seven cases of infectious mononucleosis is reported.
2. Detailed clinical observations have been described in eight patients who presented unusual manifestations of the disease.
3. An early diagnosis of the disease depends upon alert observation and correlation of clinical and laboratory methods.
4. The manifestations of infectious mononucleosis are so protean that the disease must be considered in the differential diagnosis of many other conditions.

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DISCUSSION

DR. J. HAMILTON SCHERER, Richmond: Dr. Leavell has very graphically shown the clinical variability of infectious mononucleosis. A discussion would go on for days if he we should attempt to cover all the manifestations. I am therefore going to point out simply a few things that our experience has taught us.

I think the diagnosis is particularly important when we are considering leukemia. I have had occasion to see several cases in which the diagnosis was extremely difficult. These pathological lymphocytes which are characteristic of infectious mononucleosis, as Dr. Leavell told you, may sometimes reach very immature appearing proportions. If this occurs in a young girl, associated with an anemia, as is frequently the case, one is really on the spot. Very fortunately, the heterophil test will make the diagnosis for us. These cases usually have marked ulceration of the throat.

One experience that occurred in our laboratory this week I think is important. I found our laboratory repeating a heterophil reaction on a Negro patient in St. Philip's Hospital. We had already seen a smear and said the patient did not have infectious mononucleosis. But I think this is important. The disease does not occur in the Negro race so far as we know. A few cases may have been reported, but I think in general it does not occur in this race.

There is very little else I can add that Dr. Leavell has not already told you.

HEPATOMEGALY*

C. M. CARAVATI, M.D.,
Richmond, Virginia.

The normal liver weighs from 1,300 to 1,900 grams. Clinically, its *weight* cannot be estimated and hence studies of its size and consistency must be relied upon accurately to establish hepatomegaly.

A significantly enlarged liver is one whose anterior border extends at least several centimeters below the costal margin (about two finger breadths). A truly *normal* liver may be felt in asthenic individuals, particularly at the end of deep inspiration.

*Read before the annual meeting of the Medical Society of Virginia, at Virginia Beach, October 6-8, 1941.

Palpation is the most effective single method to establish increased liver size. If abdominal muscle relaxation is satisfactory careful palpation and percussion will usually suffice to determine accurately liver enlargement. Upper abdominal masses are not always easily differentiated and when in doubt we must utilize other diagnostic procedures to aid in the differentiation. An enlarged right kidney is usually palpated posteriorly with more ease and the kidney, when enlarged, more often retains its renal contour. Flat plate of the abdomen and intravenous pyelography will usually establish which of these two organs is the source of the pathology.

Splenic tumor may confuse the identity of an upper abdominal mass. Its contour, position, restricted movement of left diaphragm, descent of the mass with inspiration, increased area of dullness in left flank and barium studies of the stomach where characteristic displacement and evidence of extragastric pressure, will usually suffice to differentiate hepatomegaly from splenomegaly.

If ascitic fluid is present in the peritoneum, it may best be aspirated, though often an enlarged liver may be detected by ballottement in the presence of fluid.

After establishing presence of increased liver size, it is then desirable to ascertain its contour and determine whether it is smooth, soft, hard or nodular and irregular. And when this is done, a concise classification is practical, in which most causes of hepatomegaly can be accurately placed.

Smooth enlargement of the liver is due usually to the general deposition in the organ of certain substances causing a symmetrical broadening of the organ and a stretching of Glisson's capsule. Contrariwise, an irregular enlarged liver is due to isolated nodules or hypertrophic areas scattered irregularly throughout the parenchyma of the organ. A classification on this basis follows:

I. SMOOTH ENLARGEMENT
- 1. Passive Congestion
  - A. Congestive heart failure
  - B. Pick's disease.
- 2. Fatty Metamorphosis (including infiltration and degeneration)
  - A. Cirrhosis
  - B. Pancreatic lithiasis (lipocaic)
  - C. Pernicious anemia
  - D. Banti's syndrome (secondary cirrhosis of liver).
- 3. Bile
  - A. Biliary cirrhosis
  - B. Epidemic jaundice (infectious, catarrhal)
  - C. Other types of toxic hepatitis.
- 4. Hemachromatosis (pigment cirrhosis).
- 5. Amyloidosis.
- 6. Miscellaneous
  - A. Lymphoblastomas, as Hodgkins, Leukemias
  - B. Still's disease.

II. IRREGULAR ENLARGEMENT
- 1. Tumors
  - A. Carcinoma
  - B. Benign tumors.
- 2. Syphilis.
- 3. Abscesses
  - A. Pyemic
  - B. Amebic.
- 4. Echinococcus cyst (hydatid tapeworm).

I. SMOOTH ENLARGEMENT

1. *Chronic Passive Congestion*[1, 2, 3]

A. It is the result of congestive heart failure and is the most frequent cause of liver enlargement. The entire organ distends due to back pressure of venous blood from right auricle into vena cava, and thence into the hepatic vein. It is smooth though firm and definitely tender. It is engorged with blood and rarely there may be visible systolic pulsation,[4] and other evidences of cardiac decompensation are present. After the congestion continues for an extended period of time it develops into a true hepatic picture with central lobular atrophy, in which red blood cells surround the hepatic cells, become static, anoxia results, and a deposition of connective tissue within the lobules begins. This has been termed cardiac cirrhosis but in reality should be called cardiac fibrosis as there are no areas of repair as is invariably seen in true cirrhosis. It is stated that about one-third of cases of passive congestion develop fibrosis.

Management.—The management of this condition is the efficient care of the under-lying cardiac state and upon improvement of the general circulation there is reduction of liver size.

B. Pick's disease is constrictive pericarditis and it is characterized by the presence of enlarged liver, associated with ascites and polyserositis and a quiet, small heart. There is prolonged high venous pres-

sure which is a factor in causing many of these changes. Fibrosis may later develop.

Management.—Surgery to the pericardium is the specific treatment for relief of this rare condition. The hepatomegaly will improve when venous pressure is reduced.

2. *Fatty Metamorphosis*

A. Is increase of fat or lipoids in the hepatic cells. The cell is injured due to toxin, or infection, and as a result anoxia develops, with more cellular destruction and fat deposition. There are many theories as to the probable mechanism of these fatty changes, but the experimental work of Dragstedt[5, 6] indicates that the most plausible is that a pancreatic enzyme, isolated by him, which he has termed lipocaic, is the chief factor in control of fatty deposit in the liver. Snell and Comfort have administered lipocaic clinically and state that it does reduce the amount of liver lipid. Fatty infiltration or large fatty livers are mostly found in alcoholics, but other agents such as chloroform, cinchophen, arsenic, and bacterial invasion, as in the post-partum infections, may cause it. The infiltration of fat causes a symmetrical enlargement of the liver which may become immensely increased in size. It is not generally appreciated that hepatic enlargement and not atrophy is the chief gross liver change that is detected in early Laennec's cirrhosis. The fat replaces the glycogen in the liver parenchyma and this antecedes the onset of fibrous changes, which may not occur for months or even years, at which time a reduction in the size of the liver will be noted. This atrophy is due to contracture from the connective tissue around the lobules, and is followed by the classical picture of hob-nail or alcoholic cirrhosis.

There is strong clinical and experimental evidence to substantiate the belief that alcohol and vital food deficiency are the chief etiological agents in production of fatty degeneration of the liver and its sequela, cirrhosis. In a review of 938 autopsy records at Boston City Hospital by Keefer[8] in which cirrhosis was cited as cause of death, 48 per cent were thought to be due to alcohol. In 224 autopsies of cases of cirrhosis studied by Bell[9] 25 per cent gave history of alcohol. Ralli, Rubin, and Rinzler[10] studied livers of many people who died of accidents and found increase of liver lipids in over 50 per cent with alcoholic history. The lipid content of the liver in patients with cirrhosis who were not alcoholics was not increased. Experimentally, Mallory[11] administered amyl alcohol to hogs for two years and could not produce liver changes, probably because their diets protected them, but if some other toxic agent, as zinc or copper, was added fatty changes developed.

Rich and Hamilton[12] in a study of rabbits on deficient diet could not produce liver pathology if they fed the animals brewers' yeast, stating that dietary deficiency with absence of vitamin B complex would produce fatty livers.

McHenry and Gavin[13] did produce fatty infiltration with special diets, particularly low in choline content, and found that the addition of brewers' yeast and lipocaic would prevent the changes. Yeast contains a large amount of available choline.

Patek and Post[14] present convincing clinical evidence in a large group of control patients, that proper dietary intake plus additional vitamin B complex, decreases morbidity and prolongs life, even in moderately advanced portal cirrhosis.

It is fair to conclude, then, that excessive alcohol consumption plus dietary deficiency, which is usually present in chronic alcoholism, or other toxic hepatic injury, may produce liver cell damage and fatty metamorphosis and in most instances this is followed by cirrhosis.

It occurs more often in the third or fourth decade, and is more common in males. The liver enlarges and may extend downward below the umbilicus and into the left flank, often causing girth enlargement. The edges are rounded and smooth, and it is nontender. With the onset of true cirrhotic changes, evidences of partial venous obstruction begin. Splenomegaly may precede hepatomegaly due to back pressure and consequent splenic congestion and enlargement. Therefore, when an enlarged spleen is felt on physical examination, always think of liver disease, and if in doubt have esophagus examined by barium studies for possible varices in the lower one-third. The findings of these will indicate the presence of hepatic cirrhosis. These may rupture, causing gastro-intestinal hemorrhage, and other evidences of venous obstruction, as spider angiomata and marked dilatation of superficial veins of the trunk, and, later, ascites develops, followed often by jaundice, due to intra-hepatic cellular damage. There is often a fall in serum proteins, and a reversal of the albumen-globulin ratio. This hypo-proteinemia may

accentuate the formation of ascitic fluid and may cause ankle edema. Bleeding tendencies may develop due to prolonged prothrombin time, and macrocytic anemia[15] and leukopenia are the rule. Liver function tests, as bromsulphalein, hippuric acid, and galactose tolerance may show hepatic dysfunction, and bilirubinemia will increase if the disease progresses. It usually fluctuates, however, and bile is usually found in the duodenal drainage.

Management.—The first essential in the treatment is to prevent ingestion of alcohol or other toxic agents. When cirrhosis has developed, small quantities of alcohol will produce serious effects and often cerebral edema and death. If ascites is present, limit oral fluid intake and sodium chloride, and give mercurial diuretics later, if necessary. If the abdominal fluid continues to increase and patient is in distress, paracentesis should be performed. A high caloric diet, with large quantities of carbohydrates, with adequate proteins and a very low fat intake is advisable. Ravdin,[16] Whipple,[17] Rich, Hamilton,[18] and others have demonstrated that carbohydrates and proteins with addition of vitamins protect the liver. In liver disease there is depletion of liver protein and of glycogen, and when these are low, the lipids in the liver rise and the liver becomes more susceptible to damage. Therefore, the patient should be given a practical fat free, high carbohydrate, high protein, and high vitamin, high caloric diet. Four thousand calories is not too much, with about 75 per cent carbohydrates, 20 per cent protein, 0-5 per cent fat with addition of 30 gms. of brewers' yeast daily. Skim milk, albumin, cottage cheese, eggs, and bananas may make up the bulk of the diet.

Intravenous injections of whole blood or plasma will aid in cases of low plasma protein. Aminoacids have been advocated intravenously, but are inferior to plasma. Keep check on kidney function. Measure twenty-four hours' intake and output of fluids often. Patients with liver diseases often retain water (oliguria). With spontaneous diuresis there is often quick reduction of the jaundice. Give parenteral liver for macrocytic anemia when it is present.[15] Vitamin K either natural or synthetic should be administered when there are bleeding tendencies. If bleeding from the esophageal varix is recurrent, ligation of the vein or its sclerosis with injection of sodium morrhuate may be considered.[19]

B. Pancreatic Lithiasis.—The obstruction of the pancreatic ducts due to stones and the consequent lack of pancreatic enzyme in the intestine is at times associated with cirrhosis. Snell[7] has reported three cases in which liver enlargement due to fatty infiltration was probably caused by lack of lipocaic as described by Dragstedt, and Cole and Howe have demonstrated fatty livers associated with pancreatic fibrosis. The absence of pancreatic enzymes in duodenal drainage, the presence of fatty, bulky stools with generalized emaciation, and findings of stones in the pancreatic duct with roentgen ray will establish the diagnosis. Give low fat, high carbohydrate diet with large amounts of calcium. Operative results are questionable.

C. Pernicious Anemia.—The liver enlargement associated with this condition is due chiefly to fatty degeneration and to deposition of hemosiderin, as described by Hunter.[9] One must be cautious as to the differential diagnosis of hepatomegaly associated with macrocytosis.[15] The liver in pernicious anemia is seldom very large and the other characteristic diagnostic findings, so well known in Addisonian's anemia, will suffice to decide the issue.

D. Banti's Syndrome (secondary cirrhosis of the liver).—This is essentially a primary fibrosis of the spleen and in the later stages a typical picture of cirrhosis of the liver develops. The occurrence of a very large spleen, with the blood picture most often found, will aid in the diagnosis of this disorder.

3. *Bile*

A. Biliary Cirrhosis[21]—In obstructive jaundice due to obstruction of the extra-hepatic ducts, there is pronounced jaundice (hyperbilirubinemia), bile stasis (thrombi)[22] leukocytic infiltration and distention of interlobular ducts with consequent increase in liver size. When the obstruction to the common bile duct is of long standing, secondary biliary cirrhosis results with deposition of fibrous tissue.

There is usually a clinical picture of sepsis with chills and irregular fever, leukocytosis, and deep jaundice in the acute cases, and if blockage continues liver damage will result. In cases of stone in the common duct, obstruction is seldom complete, while in obstruction due to neoplasm, as cancer of the pancreas, the obstruction usually is progressive, non-fluctuating and is usually complete, and hence no bile will be found in duodenal drainage or in the feces, and no urobilin will be found in the urine. The serum phosphatase[23] is usually well elevated in

obstructive cases, but is more often normal in portal cirrhosis. A positive direct van den Bergh is usually found in obstructive jaundice also.

Management.—The treatment of biliary cirrhosis (bile obstruction) is removal of the obstruction of the common bile duct when this is possible, as in cases of stone or stricture. And when this is not practical, as in cancer of the pancreas, a short circuit operation to detour the bile through the gall-bladder into the gastro-intestinal tract will relieve the pressure in the intra-hepatic bile system and reduce the infection, and hence aid in restoring liver function. Vitamin K and bile salts should be given before laparotomy and adequate glucose and protein in the form of whole blood or plasma should be freely used.

B. Epidemic jaundice or infectious hepatitis, formerly termed catarrhal jaundice, causes a smooth and moderate hepatic enlargement. It is due to intrahepatic cell damage from toxins, and true interstitial hepatic edema develops.[24] There may be associated cholangitis. The liver edge seldom extends over two fingers' breadth below the costal arch and it is usually tender. There is commonly a story of antecedent upper respiratory infection, or of gastrointestinal upset about one week before the onset of catarrhal icterus. It is more common in children and young adults, and occurs more often in the fall and winter. Anorexia, nausea, mild fever, and partially acholic stools are common. The jaundice seldom persists over four to five weeks. There is often a low sedimentation rate[25] and the spleen is moderately enlarged in over 50 per cent of the cases. It must, at times, be differentiated from lepto-spirosis (Weil's disease) and other painless jaundice. A chronic hepatitis may develop from it, but the rule is complete hepatic repair and recovery.

Hepatitis from other causes, as arsphenanine, cinchophen, etc., presents a similar clinical story and produces liver enlargement at times.

Treatment.—A low fat and high caloric diet, with adequate protein, and ample vitamins should be administered. Hypertonic glucose intravenously may aid in the severe cases, as it causes dehydration of tissue and increase of the glycogen, and it will aid in the reduction of the hepatic edema. Keep patient in bed for first few days or until fever has gone and nausea and vomiting have ceased.

4. *Hemachromatosis*

Is a deposition of pigment in the liver with a consequent marked smooth enlargement of the organ. The disease is known as Bronze Diabetes, the characteristic features being a bronze skin, enlarged liver, and later the occurrence of glycosuria. If a non-alcoholic with a definitely enlarged smooth liver presents himself, think of pigment cirrhosis. The pigment is hemosiderin, an iron containing substance which deposits itself in the glandular organs. It may be proved by the Fishback intradermal test for iron pigment but a negative test does not exclude hemachromatosis. Biopsy of skin will often aid in establishing the diagnosis. According to Yater,[26] the glycosuria is probably due to pancreatic embalance.

5. *Amyloidosis*

Is due to a replacement of normal hepatic parenchyma with amyloid material and a resulting liver enlargement with smooth contour. It is extremely rare, occurs during long lasting illnesses, and there are secondary manifestations of a general amyloidosis, characterized by general tissue wasting, an enlarged spleen, 4 plus albuminuria, and hypoproteinemia.

6. *Miscellaneous*

A. Leukemia.—Enlargement of the liver in the leukemias is thought to be due chiefly to extensive infiltration of leucocytes in the sinusoids and interlobular areas.[27] The diagnosis is made by blood studies and sternal puncture.

B. Hodgkins Disease.—Numerous small, whitish nodules, due to large numbers of reticulum and giant cells are distributed generally throughout the liver parenchyma, and this, plus areas of fibrosis, is the principal cause of hepatic hypertrophy.[27]

II. IRREGULAR ENLARGEMENT OF THE LIVER

1. *Tumors*

A. Carcinoma.—Cancer is the most common tumor of the liver. Secondary metastatic neoplasm, from primary malignancy in the gastro-intestinal tract and pelvis is the most usual type. The liver is hard and irregular and is not tender. It may enlarge very rapidly due to encroachment of the neoplasm into the veins with obstruction and congestion, or to multiple metastasis throughout the organ. Ascites and splenomegaly are rare but jaundice is common and is progressive in nature. Primary malignancy of the liver is rare, except in the Orient. It has been conceived that the high incidence of hepatic cirrhosis there is due to intestinal flukes, particularly the Schistosomas, and that

the cirrhosis may predispose to malignant change. The diagnosis is made by the finding of the primary tumor and by the signs described above, plus wasting and low grade fever with various grades of anemia. White[28] has recently emphasized the importance of thinking of carcinoma more often, in chronic doubtful cases of hepatic enlargement, particularly with jaundice.

B. Benign Tumors.—Angioma, fibroma and simple cysts may occur, but are most unusual.

2. *Syphilis (Hepato-Lobatum)*

Syphilis may produce a cirrhosis and, as a consequence, an enlarged and irregular liver. Fibrous tissue forms at the site of the gummata. The classical picture is one of cirrhosis, plus syphilis. However, diagnosis is difficult and presence of an enlarged liver, and a positive Wassermann is not sufficient. Icterus, chronic febrile reaction, a tender liver and mild ascites may be present. The therapeutic test for syphilis should be instituted and careful but adequate anti-luetic therapy and general measures for the management of the cirrhosis should be carried out after its identity is ascertained. Potassium iodide in large doses may be specific here. The arsphenamines should be used with caution, if at all.

3. *Abscesses*

A. Pyemic.—Pyogenic infection of the liver is usually secondary to thrombo-phlebitis of the portal vein, which usually originates from an appendiceal abscess or other purulent disease within the peritoneum. The abscesses are commonly multiple in the liver; often there is enlargement of one lobe, and at times a friction rub may be heard over the liver area. Splenomegaly, chills, fever of a septic type, leukocytosis and jaundice are found. There may be progressive elevation of the right diaphragm. The abscess may rupture into the peritoneum (fatal) or through the diaphragm and into a bronchiole, with spontaneous recovery.[29] Hepatic puncture may be performed to ascertain the diagnosis. The treatment of pyemic abscess of the liver is the general management of the febrile state, with attention to fluid balance and adequate vital food requirements, together with the administration of heroic doses of sulfonamides (preferably sulfadiazine) to the point of tolerance. Chemotherapy may be specific here. Surgical drainage of abscess or abscesses should be performed if conservative procedures are not helpful.

B. Amebic Abscesses cause *irregular* hepatic enlargement. The abscesses are sterile and contain no organism from the G. I. tract. Intestinal amebiasis, which is characterized by periodic attacks of diarrhea containing blood and mucus, fever, and so forth, usually antecedes the liver pathology. The diarrhea may have disappeared several months before the liver shows evidence of the abscesses. The diagnosis is made by the finding of endameba histolytica in the cystic or motile form in the stools, plus the general symptomatology, as described above. A therapeutic test with emetine is advisable if there is any question of the diagnosis.

Management.—It should always be considered strictly a medical problem. The abscesses are sterile and if opened will become infected. Therefore, no surgery should be performed. Give emetine gr. ½ daily for 3-4 days, and then gr. ¼ for 6-8 days. (This drug acts on the liver and is specific. Never over 10 grs. It is toxic.) Carbasone orally, gr. 4, twice daily for 10 days. If these do not effect a cure, aspiration with needle may be performed.

4. *Echinococcus Cyst,*

Though rare, causes hepatic tumefaction. It never has been seen in a native born American. It occurs commonly in Iceland, Australia, and Wales. It is transmitted by the sheep dogs, and the parasite is found commonly in the excreta from these dogs. It is caused by the hydatid tapeworm. The abdominal mass may feel cystic. The general health of patient is good. Jaundice is rare. Eosinophilia is usually present.

Management. — Echinococcus cyst when causing symptoms should be opened by surgery and packed with gauze saturated with 10 per cent formalin. Wait for a short time (15 minutes) and cyst will peel off completely and will not leak in cavity.

If after applying all the diagnostic principles mentioned above, and a clear conception of the nature of the upper abdominal mass is not then presented, some special procedures should be performed to clarify the findings.

Punch biopsy of the liver, as recommended by Tripoli, and Fodor[30] and by Iverson and Rohalin[31], and more recently by Hanger and Gutman[32] will give valuable etiological information with comparative safety when properly performed.

Peritoneoscopic visualization of the liver,[33-34] while a more formidable investigation, may show clear-

ly the type of liver pathology, both by direct inspection of the organ and by securing tissue from it for biopsy. It is of especial value in the aged, where more extensive surgical investigation is inadvisable. In trained hands it is safe and the findings are trustworthy.

Yater and Otell[35] described the technique of roentgen ray visualization of the reticulo-endothelial system after the intravenous injection of thorium dioxide solution, and other investigators have reported on its use.[36] This clearly defines the structure of the liver and may throw much light on the nature of the hepatic disease, but should be reserved for the unusual case, because of the supposed potential toxicity of the drug, due to its radio-active principle.

When all these measures do not clarify the picture, exploratory laparotomy may be resorted to.

An effort has been made to classify hepatic enlargement according to its contour or gross anatomic structure, and a discussion of the possible pathology, etiology, diagnosis, clinical course and therapeutic management of the more common entities has been briefly sketched.

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DISCUSSION

DR. WALTER B. MARTIN, Norfolk: Dr. Caravati has asked me to make some comment on the subject that he has discussed.

I think a review of this kind serves a very definite purpose in bringing to our minds in an orderly fashion the various types of diseases in which enlargement of the liver occurs. The subject is too wide for any general

discussion of all phases of it, but there are one or two observations which I think might be worth while. Dr. Caravati has pointed out that the most common cause of hepatic enlargement is congestive failure due to some impairment of cardiac function. Since permanent damage takes place if this congestion long continues, it is obviously important to prevent continued and long-standing congestion of the liver by early recognition and treatment of cardiac failure.

In certain cases of pericarditis associated with adhesions to the left diaphragm, with marked liver enlargement, much improvement has followed section of the left phrenic nerve.

Alcoholic cirrhosis is worthy of consideration. Dr. Caravati emphasized not only the element of alcohol but also of nutrition in the production of cirrhosis. I think there is little question that the nutritional element is by far the most important factor. In other words, I douht if alcohol acts as a tissue poison in these cases. Often we find these people on an inadequate diet. The damage to the liver is not the effect of the alcohol itself but is due to the dietary deficiency.

With injury to the liver a number of secondary factors enter into the picture. Dr. Caravati spoke of the advantages of a high-protein diet and a high-carbohydrate diet. As a matter of fact, it has been shown that the tendency to accumulate ascitic fluid and to edema in these cases is not due so much to mechanical obstruction resulting from fibrosis of the liver as it is to interference with the liver's ahility to form certain proteins. In this type of case there is almost always a deficiency of serum proteins. Whether you can correct this with a high-protein diet is open to question. Certainly I have had very little success in doing this, and I think the reason is probably the fact that that particular protein factor in the blood is controlled to a certain extent by the liver processes and where these processes are seriously damaged that patient cannot maintain a normal level of serum albumin.

There is one thing I should like to call to your attention with reference to syphilis of the liver, and that is the appearance at times of long-continued fever associated with it. The therapeutic problem then arises as to the safety of applying antisyphilitic measures in the presence of an already damaged liver. The use of potassium iodide is almost a specific therapeutic test. Large syphilitic masses often disappear after the use of potassium iodide.

Dr. Caravati pointed out the importance of the use of certain of the sulfonamide drugs in large doses in infections involving the liver. The problem comes up here of the danger of applying a remedy that will itself attack the liver in conditions in which the liver is already damaged. I would feel that if the diagnosis is certain the risk of liver damage is greatly outweighed by the risk of the disease. We have had two cases recently that illustrate this point.

In the first instance a patient with fulminating hemolytic streptococcic septicaemia, under treatment with sulfanilamide, became deeply jaundiced. The blood stream became sterile and in view of the serious jaundice the drug was discontinued. The patient died and it was found that the jaundice was due to multiple liver abscesses and not to a toxic effect of the drug.

In a second case we were able to establish a diagnosis of multiple liver abscesses secondary to portal vein thrombosis. In spite of jaundice and ascites, sulfathiazole was given in large doses over a long period of time and the patient recovered.

I want to thank Dr. Caravati for bringing to us this review of a most interesting subject.

DR. T. DEWEY DAVIS, Richmond: I haven't much to say on the subject of liver disease in general as Dr. Caravati has so beautifully outlined it. I would like, however, to say a few words on the question of alcoholic cirrhosis. In the past two years a number of relatively young individuals have come under my observation; all of them have shown markedly enlarged livers and various stages of liver failure; all of them had been taking excessive amounts of alcohol; they all showed frank or latent jaundice, some fever and tendency to leucocytosis; a picture which has been described as subacute cirrhosis but which might as well be spoken of as an alcoholic hepatitis.

It is common knowledge that these people have some mental disturbance which leads them to use alcohol excessively; they commonly do not eat sufficiently while taking alcohol, and the cause of the condition is a combination of both of these factors and perhaps, in addition, an individual hepatic sensitization to alcohol.

One of my patients insisted on some substitute for alcohol and during the past year he has taken considerable amount of barbiturate without doing him any harm and I believe it has kept him from returning to whiskey. This naturally is not a good practice but might be considered with certain individuals.

In conclusion, I would like to congratulate Dr. Caravati on his excellent presentation.

DR. JAMES E. PAULLIN, Atlanta, Ga.: Dr. Caravati's paper has covered the differential diagnostic problems presented in separating the various types and causes of enlargement of the liver. The problem is not always an easy one and frequently requires considerable time, observation and study. To one cause of hepatomegaly I would like again to emphasize the clinical signs and symptoms. The recognition of hepatic syphilis is frequently missed because it is not looked for; on the other hand, it is well known that considerable damage may occur to the liver before there are any symptoms suggestive of this disease. It is my belief that considerable unrecognized damage occurs to the liver in patients with latent syphilis, and it is entirely possible in many patients who have jaundice following the administration of the arsphenamines that the jaundice may be due to syphilis of the liver rather than to the toxic effect of the arsenical.

In syphilis of the liver there are two types of pathological changes; in one there is either a single or several smaller gummata with very little evidence of further interstitial change. When healing takes place in this

type of lesion it is usually accompanied by some enlargement of the liver and a rather marked gross irregularity due to the formation of large bands of connective tissue in the organ. The other type of lesion is a diffuse infiltration of the liver with lymphocytes, plasma cells and the formation of connective tissue, leading to a diffuse cirrhosis and hepatomegaly. McCrae, who years ago studied a large series of patients with syphilis of the liver, stressed the importance of the following physical findings as necessary in making the diagnosis: (a) hepatic enlargement, (b) tenderness on palpation over the liver, (c) low grade continuous fever, (d) jaundice, (e) mild degree of ascites. In any patient with these findings or with three of the five findings being present one is justified in suspecting syphilis, even with negative blood tests.

In conclusion, may I take this opportunity of emphasizing the importance of treating patients with syphilis of the liver, or, as a matter of fact, any patient who has latent syphilis, for at least three months with potassium iodide and bismuth. At the end of this period one may then begin the intravenous use of the arsenicals, starting with a small dose, 0.1 gram, and gradually increasing to 0.3 gram for five or six doses and then returning to bismuth for ten doses. After this the dose of the arsenical may be increased to 0.6 gram. By following such a procedure lives will be saved and complications following treatment reduced to a minimum.

DR. STAIGE D. BLACKFORD, University: I should like to congratulate Dr. Caravati upon his very lucid exposition of a very difficult matter. I think we should call attention to the fact that the treatment of liver disease is not regarded half as pessimistically as it used to be. I should like to emphasize what Dr. Paullin mentioned. We know that some experimental animals can get along without nineteen-twentieths of the liver. A human being can certainly get along on twenty per cent of it. Another point; it is the hardest organ in the body to keep from regenerating. So I think we have a far brighter outlook than in the past.

I should like to ask Dr. Caravati what his experience has been with peritoneoscopy. We have had a peritoneoscope at the University of Virginia Hospital for several years. It has been hard to get the surgeons to use it, because they seem to think they do not get much out of its use. I should like to ask Dr. Caravati to tell us what his experience has been.

DR. CARAVATI, closing the discussion: In regard to Dr. Davis' reference to acute alcoholic hepatitis syndrome, I agree that after acute bouts of alcoholism (that is, the taking of large quantities of alcohol in a comparatively short length of time), that hepatic dysfunction does occur, due probably to acute edema, or more likely to an exaggeration of the liver pathology which was present previously. It is a known fact that in people with liver disease, their alcoholic tolerance is limited and it has been recently pointed out that neo-arsphenamine administered to a chronic alcoholic, with pre-existing liver disease, may produce acute hepatitis, with jaundice, etc.

In regard to the reference to syphilis of the liver as discussed by Drs. Martin and Paullin, I would like to emphasize that the criteria for the diagnosis of luetic hepatitis as stressed by Dr. Paullin, namely, mild but rather constant fever, jaundice, hepatomegaly, ascites and positive serology are quite definite evidences that syphilis is the cause of the liver enlargement, and as emphasized by Dr. Martin large doses of iodides may be particularly beneficial in these cases.

In answer to the doctor's question in regards to the probable prognosis of cirrhosis of the liver, I would like to emphasize the opinion, as recently published by Dr. Patek, of New York, of his clinical experience in which the records demonstrate that the prolongation of life, after the occurrence of ascites and other evidences of advanced liver disease, is quite noteworthy and that some patients, with moderate or advanced cirrhosis, can be expected to live longer than we had hoped for formerly, if treatment as described above is given.

In answer to Dr. Staige Blackford's question in regards to peritoneoscopy. It has given us another method of diagnosis which we did not previously have. With the proper use of the peritoneoscope clear vision of an enlarged liver can usually be had and if necessary a biopsy may be taken with the instrument. With electrocoagulation, hemorrhage may be prevented, which we formerly feared. It should be considered a surgical procedure. A small stab wound is made in the abdomen and the peritoneoscope is introduced into the peritoneal cavity which is dilated with air so that pneumoperitoneum is produced. In very old people, in whom the cause of upper abdominal masses cannot be ascertained and a laparotomy is probably contra-indicated, peritoneoscopic examination is a valuable aid. It has been used extensively in Germany and more frequently in this country recently.

LESSON LEARNED FROM NATURE IN THE CONTROL AND ARREST OF PULMONARY TUBERCULOSIS*

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Danville, Virginia.

Tuberculosis is perhaps the oldest disease of which we have any knowledge. It probably dates back before the dawn of history. When we consider the lapse of time between the Stone Age and the 20th Century our achievements in the control and arrest of tuberculosis have not been phenomenal. After all these centuries tuberculosis is today the greatest economic health problem confronting the Public

*Read before the South Piedmont Medical Society at South Boston, Va., November 19, 1941.

Health authorities and medical profession of the state and nation. Time and Nature have been very kind and generous in supplementing our efforts and we owe to Nature a good deal of the credit for the progress we have made. After twenty-five years of study and observation I am a bit querulous about the attitude of some authorities today. They tell us that primary infection assures to the infected subject a degree of relative immunity, or an increased resistance to reinfection by the tubercle bacilli and immediately contradict that statement by saying infection by the tubercle bacilli renders the person allergic or more susceptible to reinfection. Some authorities decline to recognize the primary or childhood type of the disease, notwithstanding it has been demonstrated beyond question that childhood tuberculosis is predominantly a disease of the mediastinal and tracheo bronchial glands from which the great majority of children recover without symptoms or treatment. I believe we have two distinctive types of the disease. I further believe that Nature has an objective in the two types and I do not believe it to be Nature's purpose to use the children of our country as a seeding ground for their future destruction. Let us consider one or two reports bearing on the subject. Fellows, in 1940, reported on three thousand one hundred and seventy-nine office employees who were examined for pulmonary tuberculosis in 1926; the examination included chest films in all cases. Two thousand five hundred and thirty-six showed normal healthy chests and four hundred and forty-nine showed healed primary tuberculosis. Between 1926 and 1938, when the observation was concluded, fifty of the healthy group and seven of the healed primary complex group had developed clinical tuberculosis. This shows, I think, if nothing more, a lack of exaggerated susceptibility to reinfection in the primary infected group. In a more recent report from a Philadelphia General Hospital, from September 1935 to September 1939, six hundred and forty-three white females entered the training school for nurses at the average age of 19.8 years. They were all given the tuberculin test on admission, and one hundred and eighty-three, or 28.5, gave a positive reaction to the primary test on admission. These students were kept under observation for several years. The annual attack rate of students developing clinical tuberculosis was 5.43 in the negative reactors to the tuberculin test, whereas there were only 2.7 per cent in the positive reactors. With 100 per cent positive by the time of completing their training there have been no deaths and none were seriously ill.

Prior to writing my paper I had reviewed two books on childhood and adult tuberculosis by two well and favorably known American authors. Both of these gentlemen have had long experience in the study and treatment of pulmonary tuberculosis supported by years of research work, without denying the existence of exogenous reinfection, and subscribe to the theory that all clinical or reinfection types of pulmonary tuberculosis are later manifestations of the childhood or the primary infection by the tubercle bacilli. This, in my opinion, is contrary to a mass of evidence against this theory, and not in keeping with the many simple lessons Nature has endeavored to teach us. If infection by the tubercle bacillus rendered the subject allergic, or more sensitive to reinfection, how are we to explain the recognized fact that perhaps 90 per cent of us harbor tubercle bacilli somewhere in our bodies by the time we reach early middle life, while, relatively speaking, so few of us are sick. It is an uncontrovertible fact that all clinical tuberculosis is due to infection by the tubercle bacilli at some period of life. Does it necessarily follow that infection in the average American white child means clinical tuberculosis at some subsequent period of life? On the other hand, have we any ground for the belief that primary infection in children or adults gives to them a degree of relative immunity? or an increased resistance to the reinfection type of the disease? Is primary infection a health hazard or an asset? I believe the primary infection in the normal healthy American white child an asset.

In taking this position I fully appreciate the fact that I have very little company and that I am an isolationist on this phase of the tuberculosis question. We are told on good authority that the childhood type is a benign disease recovering without treatment of any kind. There may be a few isolated exceptions to the rule, but the exceptions do not develop the disease in the reinfection form of adult pulmonary tuberculosis, which is progressive, necrotic and destructive. We are also told the two diseases produced by the tubercle bacilli in the child and the adult types differ as much in symptomatology, pathology and course as if they had been produced by an entirely different organism.

Why the difference in behavior in childhood and adult periods of life unless Nature has some objective in view? We are told that Nature's defense forces go into action almost immediately after the tubercle bacilli enter the human body through the action of the leucocytes of the blood stream and connective tissue cells, and that the great majority of the invading organisms are destroyed. Those escaping destruction are imprisoned, some dying in prison, while an indefinite number retain their virility for the life of the host. Remembering there is no control over the number of bacilli producing the primary infection, that in some cases the dose may be small, in others massive, is it too much to assume that Nature imposes her authority to reduce the number of organisms to a point of protection rather than destruction. Who among us doubts the ability of Nature's defense mechanism to destroy all the disease and death producing germs? Granting this to be true, are we prepared to accept the theory that Nature's objective was a plan for the future destruction of many of the victims of primary infection? If so, why did Nature interfere at all? Why did not the law of Nature—the survival of the fittest— prevail, and end the matter instead of deferring it until some future day? There can be but two logical conclusions drawn from the story of Nature's interference in the primary infection of childhood by the tubercle bacilli. One is protection, to which I subscribe; the other potential destruction.

Is it a just accusation to say that Nature plants the seed of sickness and death in the bodies of our children to lay dormant during childhood and adolescence until the dawn of young manhood and womanhood when the whole panorama of life begins to unfold with its hopes and aspirations and then strike them down with a deadly form of the disease that has remained quiet for years? I cannot bring myself to the point of believing Nature does her work in such way. On the contrary, I believe that in all her efforts to save life in some instances, and to prolong it in others, Nature has a definite objective back of her efforts. Was it an aimless gesture on the part of Nature when the elements of coagulation were added to the composition of blood to control hemorrhage Has Nature no objective in view building an impervious wall around the carbuncle on the back of the neck, or the appendiceal abscess, or transplanting a portion of omentum to close an opening in a ruptured gastric or duodenal ulcer? Surely there must be some purpose in these wonderful works of Nature and I cannot think Nature makes an exception of tuberculosis. We are told on eminent authority that only 1 to 10 per cent of children with the childhood type of tuberculosis develops the disease in clinical form before reaching their majority, and that only a small per cent of infected people develop clinical tuberculosis during normal life. Since it is a matter of resistance, is it not reasonable to conclude that the small per cent of infected children developing the disease by the time they are grown are substandard children, children upon whom the sins of the fathers or grandfathers have been a determining factor in reducing their resistance to the disease? Then, too, it is during the transitional period of life that young folks, many of them certainly, disregard the laws of health and right living.

Quoting Dr. Myers, of the Lymanhurst Health Center and Sanatorium, Minnesota, Dr. Myers says: "In the early days of Lymanhurst they maintained an open air school and wards for the hospitalization of infected children. They report a group of 155 children with the childhood type of pulmonary tuberculosis, 19 of whom were treated in the special wards for children, 50 in the open air school, and 86, due to parental objection to the treatment, remained at home living the lives of normal children. After 14 years they were able to trace 136 of the 155 children and they were unable to observe any difference in the course of the disease in the treated and the untreated. After the observation of 136 children, they had under observation a larger group of children who had the primary type of pulmonary tuberculosis. In this larger group they were unable to see any difference in the treated and untreated." I want you to note who it was that gave us this great lesson in the handling of the childhood type of tuberculosis. You will observe that it was not the public health authorities or medical profession but the parents of the children who proved the fallacy of the theory of the advocates of hospitalization and treatment of childhood tuberculosis. Dr. Chadwick, Health Commissioner of the State of Massachusetts, after his observation of a number of children with the childhood form of the disease, comes to the same

conclusion. The celebrated Laennec, who gave to us the universally used and valued stethoscope, introduced percussion auscultation to the medical profession and emphasized the value of cough in bringing out and intensifying rales of the lungs, in the early days of the 19th century, found on autopsy that scarcely any subject died of the first attacks of tuberculous disease. We have the statement on good authority that bodies going to auopsy around the middle period of life, dying from causes in no way related to tuberculosis, show unmistakable evidence of healed tuberculosis, as high as 40 per cent, according to some authorities. Here, again, you will note that Nature gives us, without the complement of modern day methods of treatment, a valuable lesson in the role Nature plays in the control and arrest of pulmonary tuberculosis.

The late Dr. Allen Krause, of Johns Hopkins and Tucson, Ariz., who spent the greater part of his life in research work in tuberculosis, asked why concern ourselves about infection when so many of us are infected and so few of us sick, and added that, with new methods of diagnosis, he found that children under one year of age take care of the first infection by the tubercle bacilli with very little inconvenience, showing, I believe, that Nature takes care of nursing babies as well as the older children. He further stated that the child will take care of reinfection by the tubercle bacilli without harm provided Nature's defense mechanism is given time to prepare the host for subsequent reinfections.

Dr. Pottenger, of California, says the fortunate fact is that the primary infection usually raises the specific resistance to such a state of efficiency that larger numbers of tubercle bacilli are required to produce reinfection. He further states that it has been proven experimentally and observed clinically that each infection overcome gives increased protection.

We have been slow in following Nature's lead in handling tuberculosis. However tardy we may have been, men who have devoted their lives and talents to the study of tuberculosis in its various manifestations are coming to the conclusion that tuberculosis is not a childhood problem, but, on the contrary, essentially a disease of adult life, and some of them are beginning to ask the question whether it is not safer to assume the repsonsibilities of life as a positive rather than a negative reactor to the tuberculin test. It is said on authority that to find one child with the adult type of clinical tuberculosis would require the examination of approximately one thousand children under 12 years of age and that the time and money spent in taking x-ray plates of the lungs of children under 12 years of age is time and money almost totally wasted. In a recent report by the health commissioner in charge of tuberculosis in New York State, where there is a set-up in case finding similar to that employed in Virginia, he gives the actual cost to the state in finding clinical cases of tuberculosis in the different age brackets and makes the statement that it cost the state of New York a little more than seventeen hundred dollars to find a case of the adult form of pulmonary tuberculosis in a child under 15 years of age. A good many states and local health organizations are still chasing the children in their efforts to prevent childhood infection. Without any statistics as a basis for my conviction, I suspect if the figures on the cost of the continuous campaigns to find tuberculosis in children in Virginia for the past 10 or 15 years were available, the money spent would be adequate to erect and equip a sizeable building in the state for the segregation and treatment of many of the open cases of pulmonary tuberculosis now at large, and by this means break up many contacts in the homes. If we are going to pursue the course of attempting to prevent childhood infection we should direct our campaign to the end of finding the open cases of tuberculosis and look for early cases of clinical type of the disease in the late teen age and not in the childhood.

I have often wondered how and why the guinea pig became involved in the tuberculosis problem. I am still wondering why men like Koch, Trudeau, Petroff, Krause, Hamburger, Rank, Baldwin, Gardner, Webb and others spent years experimenting with the tubercle bacillus and the guinea pig to prove or disprove a theory if no practical application was to be made of the knowledge gained by their labors. They definitely established the fact that resistance to infection and reinfection in the guinea pig by the tubercle bacilli could be increased by the injection of controlled doses of the organism. Dr. Petroff, of Saranac, New York, says the only immunity we can justly regard is due to the presence of the tubercle bacilli in the body and it may be produced by natural or artificial infection. He also refers to the relative immunity in the Jewish race are most suggestive. Dr. Webb, of Colorado

Springs, raised the resistance in a guinea pig starting with a single tubercle bacillus, increasing the number at each subsequent injection until the pig was able to withstand the injection of 150,000 organisms. The injection of the guinea pig into the picture may have no significance in the minds of some, but I believe the future holds a lesson of revolutionary import from these experiments and observations. We are slow to learn, but some day when the mists of our pre-conceived ideas which obstruct our vision today have scattered, we will see and appreciate the value of these experiments. Koch gave us a lesson of more than passing significance on inheritance, in my opinion, when he demonstrated that guinea pigs born to the previously inoculated mothers showed greater degree of resistance to reinfection than pigs born to the healthy mother.

There has been a gratifying reduction in the mortality from tuberculosis during the past twenty or twenty-five years due to a good many factors, namely, improved social and economic conditions, education of the public, isolation, improved diagnostic technique and chest surgery. However, history records a gradual reduction in mortality for the past one hundred years. But, notwithstanding the apparent success made, it is my opinion that we will never reach our goal by the prevention of infection. Suppose we could, by the waving of some magic wand, destroy the tubercle bacillus? What would be accomplished? We would, after a few generations, dissipate the immunity and resistance acquired by our long association with the disease, former infections, and inheritance and revert to a nation of primitive peoples or virgin soil. History records the disastrous results of the introduction of the tubercle bacillus to people where tuberculosis was unknown. We have a graphic demonstration of this in our colored race. The percentage of morbidity in the colored race is less than in the white, yet the percentage of mortality in the colored race is twice the mortality of the white race. The disease runs a more progressive and fatal course in the negro race and it is said they do not enjoy the same degree of relative immunity from primary infection as the white race. They lack the back log of long association and inheritance in their fight with the great enemy of the human family. The late Dr. Fishberg, one of the recognized authorities on tuberculosis, said: "Bearing in mind the facts * * * it appears that tuberculosis is inherently not a racial problem; there are no races which are more vulnerable to the disease because of phylogenetic pecularities * * * which distinguish one race from another. One human race or group, when first encountering the tubercle bacillus, is as vulnerable as another. It is only after they have been exposed to infection for many generations that they acquire a certain degree of resistance which, when it does occur, is liable to cause milder clinical forms of the disease than when occurring in races that are virgin soil to the bacilli." In support of this opinion, Bogen, in the follow-up of patients treated at Los Angeles County Tuberculosis Sanatorium, found that 58 per cent of the negro cases die, 49 per cent of those of "Norse" origin, 40 per cent of the Irish, 34 per cent of the American and 26 per cent of the Jewish.

Collapse therapy of the lungs for any diseased condition depends entirely upon the reserve capacity of the respiratory system. Collapse therapy in the treatment of pulmonary tuberculosis was suggested by Nature some hundred years ago. In fact, it was theoretically discussed more than a hundred years ago, however, only coming into practical use about thirty years ago, in this country. Potain, Forlanini, and the great Chicago surgeon, John B. Murphy, received their inspiration and visions of the value of collapse therapy in pulmonary tuberculosis from their observations of the beneficial effects of pleural effusion and spontaneous pneumothorax. Pleural effusion was spoken of by some observers as providential, by others as life saving. Fifty years ago the improvement in pregnant women with pulmonary tuberculosis was noted. From this observation pneumoperitoneum came into use, in a limited way, to keep up the limited action of the lungs after the termination of the pregnancy. It has been observed by physicians doing chest work that the hemidiaphragm on the affected side frequently rises and becomes fixed in position. This not only reduces the volume of the diseased lung by some 200 to 400 cubic centimeters but it also aids in putting the lung at rest by eliminating the up and down piston-like motion of the diaphragm with each respiratory movement. The practical application of this principle to the therapeutic treatment of pulmonary tuberculosis was discovered by a great surgeon cutting the phrenic nerve accidently. Who can say, keeping the many achievements of Nature in mind,

that the scalpel in the hand of the surgeon was not guided by the hand of Nature, with an objective in view. Following Nature's lead, 40 per cent of patients admitted with pulmonary tuberculosis to the sanatoria of America are receiving some form of collapse therapy today; and I think the results following Nature's lead in the treatment of pulmonary tuberculosis are being demonstrated daily by the modern surgical methods of treatment. We inoculate children and adults today to increase their resistance to other disease producing organisms, and unless we believe Nature has unconditionally surrendered to the tubercle bacillus, and we refuse to follow Nature's lead in the prevention of the destructive form of tuberculosis, I believe the day will come when our children will be inoculated with some modified form or product of the tubercle bacilli under controlled and regulated doses to increase their resistance against future clinical or the re-infection type of the disease. The great question involved for future determination is whether or not Nature and Nature's God makes an exception of tuberculosis, or is more concerned for the lower animals of her creation than for Man and the Children of Men.

I am living in the zone of life when the evening shadows are lengthening and cannot hope to see the advent of this revolutionary innovation in our control of tuberculosis, but from Nature's lead and personal observation for many years, I confidently believe it to be on the way.

CARCINOMA OF THE CERVIX: TIME LOST BEFORE TREATMENT*

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This paper is written with the desire to decrease the time lost before treatment in cases of carcinoma of the cervix and thus improve the results of treatment in this disease. The time elapsing before treatment is analyzed and suggestions to diminish the delay are made.

The stage of the disease at the time of treatment is perhaps the most important single factor of prognostic importance in carcinoma of the cervix.

In a series of 220 cases at the Medical College of Virginia, following the League of Nations' definition of 1929, the distribution of cases by stages was as follows:

TABLE I

Stage of Disease at the Medical College of Virginia
(League of Nations' Classification, 1929)

Stage	I	II	III	IV	Total
Number	13	55	93	59	220
Per cent	6%	25%	42%	27%	100%

It is seen that only 6 per cent were in the most favorable or so-called operable group. Twenty-five per cent were in the group of so-called border-line operability. Sixty-nine per cent, or two-thirds of the cases, were in the advanced stages, represented by III and IV, the frankly inoperable group. This distribution of cases is similar to that reported by the League of Nations Health Organization. In 1939 it reported a collected series of approximately 8,000 cases, quoted in the following table:

TABLE II

Stage of Disease: Percentage Distribution

Stage	I	II	III	IV	Total
Medical College of Virginia	6	25	42	27	100
League of Nations	11	29	43	17	100

The unhappiness of such a distribution of cases is apparent from a consideration of the stage factor in prognosis. For example, the following table shows the results of treatment calculated for each of the four stages in the same League of Nations' series of collected cases:

TABLE III.

Five-year Cure-rate by Stages
League of Nations Report

	Per cent
Stage I	57.2
Stage II	37.6
Stage III	22.0
Stage IV	5.5
All Stages	27.6

The stage of the disease is the product of the rate of growth times the duration of the disease.

*From the Department of Gynecology, Medical College of Virginia.

Read before the annual meeting of the Medical Society of Virginia, at Virginia Beach, October 6-8, 1941.

RATE OF GROWTH X DURATION OF DISEASE = STAGE OF DISEASE

It is with the factor, duration of the disease, that this paper is concerned. It deals with that period of time, mostly wasted time, which precedes treatment. Ninety-one unselected cases were studied in an effort to analyze that period; each patient being asked specific questions as follows:

1. When did symptoms of present illness begin?
2. When did you make first visit to doctor for these symptoms?
3. Did he do a pelvic examination?
4. What advice did the doctor give you?
5. When were you advised to come to the hospital?

For the duration of the disease the time elapsed from the date of onset of symptoms to the date of hospitalization of the commencement of treatment was taken as the nearest approach to the accurate figure. It was, of course, realized that the onset of the disease always antedated the onset of symptoms by an undeterminable interval in each case. The period from the time of onset of symptoms to the time of treatment averaged eight months (235 days). This was termed the total period of delay.

This total period of delay was subdivided into three periods. Period I was the time which elapsed from the onset of symptoms to the first visit to or by the doctor. This was the period of the patient's delay. The average length of this period was four months (120 days).

Period II was the time which elapsed from the first visit to or by the doctor to the date of proper advice to be defined later. This was the period of the doctor's delay. Most of the doctors gave proper advice at the time of first visit or within a few days thereafter; many did not. In a few cases the first doctor seen never gave the proper advice, this being given by a subsequent doctor. Period II averaged three months (90 days).

The answer to the question, "did the doctor do a pelvic examination?", gives some explanation of the length of Period II. In twenty-seven of the cases the doctor did not do a pelvic examination on or within a few days of the first visit. Thus this primarily important step was omitted or considerably delayed in approximately one-third of the cases.

However, in 11 of the 27 cases in which pelvic examination was not done proper advice was given in that the patients were all immediately referred to the hospital, 10 on the day of the first visit, and one after five days.

TABLE IV

Pelvic Examination

	Yes	No	No Record	Total
Number	61	27*	3	91
Per cent	67	30	3	100%

The answers to question 4 relating to the advice given showed that 60 were given proper advice. Proper advice as referred to in this paper means that the patient was referred within a reasonable length of time to a hospital, special clinic, or consultant for diagnosis and/or for treatment. Thirty-one, or one-third, did not receive proper advice. Twenty-two of these cases received medical treatment of various kinds. Such treatment included antiluetic therapy, unspecified injections, bed rest, pills and douches.

TABLE V

Advice

	Proper	Improper	Total
Number	60	31	91
Per cent	66	34	100

Period III was the time elapsing from the date of proper advice (given at sometime in every case) to the date of admission to the hospital or of commencement of treatment. This may be called the period of miscellaneous delay. The average length of this period was one month (27 days).

A summary of the analysis of the questionnaire is as follows:

TABLE VI

Period I	(Patient's delay)	4 months
Period II	(Doctor's delay)	3 months
Period III	(Miscellaneous delay)	1 month
Period IV	(Total delay)	8 months

This 8 months' time loss from the onset of symptoms to the institution of treatment compares closely with the 7.5 months' period found by Todd in a similar study at the University of Michigan.

Manifestly eight months is too long a time to intervene from the time when the disease is easily diagnosed to the institution of therapy. It is well to consider how this delay might be decreased, how each of the periods noted above might be decreased.

Shortening of Period I must be brought about by education of the public. The public must be taught that early cancer is curable. Women must be taught

*Eleven of the unexamined cases were, however, immediately referred to the hospital, thus receiving proper advice.

not only to be examined when symptoms occur, but should be made to realize the importance of periodic (twice yearly) examinations during the so-called cancer age, even though no symptoms are present, for the disease is often advanced before symptoms begin. Such education is being carried out by the American Society for the Control of Cancer. If completely successful, Period I would approach zero.

It is believed that the figure for Period II is greater than that which exists in the country at large. But there are reports from elsewhere indicating similar neglect. This period should be reduced to a few days. It should not exceed the time necessary to examine the patient plus the time necessary for taking and examining tissue for diagnosis.

Biopsy finally establishes the diagnosis of carcinoma and this procedure should be applied to all questionable areas on the cervix. The tissue obtained should be examined by a qualified pathologist.

A careful, prompt and conscientious examination by the doctor will do much to reduce Period II to a minimum.

Period III, the shortest in this series, represents the delay in accepting the proper advice. The patient may be solely to blame for this period in many cases, but in others this delay is due to the necessity and difficulty of making financial arrangements for treatment. This delay in the cases of indigent patients can be decreased by better public support of such agencies as the Virginia Cancer Foundation which raises funds for the treatment of such cases, and by better understanding between hospitals and local agencies.

SUMMARY

The stage of the disease is the most important factor of prognostic importance. The cure rate drops rapidly as the stage advances. Put differently, the longer the disease has been in progress before the institution of treatment, the graver is the prognosis. Unfortunately, most of the cases of carcinoma of the cervix are first treated in an advanced stage.

The greatest hope for increasing the cure rate lies in reducing the time which elapses from the onset of the disease to the institution of treatment. With this in mind ninety-one patients were questioned on admission in an effort to analyze the period of delay before treatment. It was found that on the average, patients delayed four months before going to the doctor after the onset of symptoms, that the doctor delayed three months before giving proper advice, and that there was another month of delay before treatment was begun.

In one-third of the cases the doctor did not do a pelvic examination, and in an equal number of cases improper advice was given.

To improve this condition the public must be educated to seek medical advice earlier, medical advice must be improved, and the availability of treatment must be facilitated.

In carcinoma lost time is irretrievable.

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DISCUSSION

DR. WRIGHT CLARKSON, Petersburg: I do not know whether we fully realize the importance of this paper. I can add nothing to it, but I would like to emphasize some of the things that Dr. Hoge has told you, because I am afraid that you may have missed some of them. It is too important a paper for you to miss even minor parts of it.

There are many adjectives that could be applied to such a paper. You might say that it is bold. It is. It takes nerve to get up and tell our friends of such terrible mistakes as are clearly pictured in this paper. We have been talking for many years about educating the laity and lamenting the fact that the patient's delay is many months. Here you find that it is, on an average, four months. That is bad, is it not? But did you catch the point that the doctor's delay is, on an average, three months, and then a little miscellaneous delay of another month? So if you take all the time that proper treatment is delayed while the patient is under the doctor's care, you find that we, as a profession, delay proper treatment just as long, on an average, as the laity. This is a sad commentary on our profession.

A short time a go, I published a paper in *Southern Medicine and Surgery.* I believe the title was "Unnecessary Dissemination of Cancer". In that I tried to call attention to some totally unnecessary deaths from delay in cancer, and I ended with a case which I think clearly illustrates this situation. We know that it is not intentional; all of us are trying to do the best we can,

and sometimes when I think how we rush around from day to day and how many long hours we put into our work I often wonder that we do not make more mistakes. It is not with the idea of criticising anyone that I say this, but here is about the average type of patient that we see day in and day out.

The patient I have in mind came into the office of a fine young physician in June of last year. This doctor did not make a vaginal examination on the patient. He took a very brief history and did not record that, and then he ordered some genantrin, which you know is a growth-stimulating hormone and certainly could not improve cancer. He treated her over a period of about four months and, finally, when the hemorrhage did not cease, sent her to a surgeon. The surgeon took her to a standardized hospital (or a hospital supposed to be standardized) and here he cauterized the cervix. He did not do a biopsy. The patient went home and continued to flow. He took her back to the same hospital and then finally did a biopsy and found cancer. Altogether, the physicians took six months to diagnose this cancer.

Gentlemen, that is happening daily all over this country, and I do hope that this paper may come home to us—to all of us, because all of us make mistakes. This is an excellent paper, and I certainly do wish to express my sincere gratitude to Dr. Hoge and his colleagues of the Medical College of Virginia for bringing this paper to us today.

THE ROENTGENOLOGICAL DIAGNOSIS OF GASTROINTESTINAL HEMORRHAGE*

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and
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Among the multitude of signs and symptoms of disease few have more grave significance than bleeding from the gastro-intestinal tract and fortunately few are viewed with more concern by both patient and physician. For this reason the patient consults his physician early and in most cases a thorough search is begun at once to determine not only the site but the type of lesion responsible for the hemorrhage.

By a painstaking history and a careful examination the clinician can in many instances arrive at a diagnosis with a remarkable degree of accuracy. However, with so many possibilities to consider the careful physician will not immediately conclude that bleeding is the result of a peptic ulcer but will at once ask for a complete roentgenological study. While it is well known that peptic ulcer is the most frequent cause of hemorrhage from the upper alimentary tract and hemorrhoids from the lower, all of us have seen embarrassing and even fatal mistakes result from the dangerous assumption, based on clinical data only, that one particular lesion is responsible for the patient's bleeding.

We have all seen the patient whose first and only sign of disease was bleeding and in whom all available clinical data yielded no clue as to its etiology. In those cases particularly a presumptive diagnosis is dangerous and an opinion should be withheld until a careful roentgen examination is completed.

The radiologist should be acutely conscious of his responsibility when these patients are referred to him, as his accuracy and judgment largely determine the proper therapeutic measures. If after a careful examination the cause of the hemorrhage is not discovered he should either repeat the examination before discharging the patient or request the referring physician to have the patient return for further study at an early date. Repeated examinations are often necessary to discover the site and cause of gastrointestinal hemorrhage.

Almost any lesion of the esophagus, as elsewhere in the digestive tract, may bleed, but the ones most frequently encountered are carcinoma, peptic ulcer and varices.

Carcinoma may occur at any point and is depicted by an irregular filling defect which deforms the lumen and in its late stages usually produces marked obstruction. Hemorrhage may be sudden, massive, and even fatal.

Esophageal varices are nearly always localized to the lower one-third of the esophagus, are usually secondary to cirrhosis of the liver and produce smooth, tortuous shadows protruding into the lumen. Repeated small, or even one massive fatal hemor-

*Read before the annual meeting of the Medical Society of Virginia, at Virginia Beach, October 6-8, 1941.

rhage, occur not infrequently from these lesions and are usually the first indication of their presence.

Peptic ulcer occurs at the lower end of the esophagus, and, as elsewhere in the digestive tract, is characterized by an ulcer niche which protrudes beyond the wall. Deformity or spasm of the ulcerated area is often observed. Peptic ulcers of the esophagus occur more frequently than ordinarily believed and should be searched for in every case of bleeding from the upper digestive tract.

Among the many lesions which develop in the stomach and duodenum benign peptic ulcers far outnumber any other and are the most common cause of hemorrhage. This well known fact has been responsible for many serious errors as many of us often treat bleeding patients on the dangerous assumption, without roentgenological confirmation, that the hemorrhage is the result of an ulcer.

Duodenal ulcer, which is much more frequent than gastric ulcer, is denoted by varying degrees of bulbar deformity and in its active phase by irritability of the bulb and an ulcer niche. The niche often cannot be demonstrated except by manual pressure under the fluoroscope or by spot films made during pressure over the bulb.

Benign gastric ulcers vary in size from a minute niche barely visible to a crater 2½ cm. in diameter, are nearly always located on the lesser curvature, show convergence of the mucosal folds toward the crater and present no evidence of tumefaction about their margins.

Next to benign ulcer, carcinoma, particularly of the stomach, is the most frequent cause of bleeding from the upper alimentary canal. It usually occurs in patients past the fourth decade of life but may occur at any age. It produces characteristic deformities and is seldom overlooked by one trained in the roentgenological diagnosis of gastrointestinal disease. The differential diagnosis of benign ulcer from an early ulcerating cancer is sometimes difficult but usually irregularity of the crater, evidence of tumefaction about its margins and lack of spasm are to the experienced observer indicative of malignancy.

In the absence of ulcer and cancer many other gastric and duodenal lesions must be considered and searched for in any case of hemorrhage.

Herniation of the stomach through the diaphragm, usually found in stout women past forty years of age, is often confused clinically with gall-bladder disease or peptic ulcer. The herniated portion of the stomach may hemorrhage from strangulation or ulceration and unless roentgen examination is performed in the Trendelenburg position these hernias are easily overlooked.

Benign neoplasms consist of fibromas, myomas and adenomas. The latter are often present as multiple, smooth tumors protruding into the gastric lumen and usually spoken of as polyps. All of these growths cause occult rather than massive hemorrhage, are potentially malignant and whenever possible should be removed.

Prolapse of the gastric mucosa through the pylorus is almost never mentioned in textbooks and seldom in the current literature. While this lesion is not seen frequently it is a potentially dangerous bleeder and unless one is careful it will escape detection. Occult hemorrhage is frequent, and may be its only clinical sign. It produces an "umbrella like" deformity in the base of the duodenal bulb caused by displacement of barium by gastric mucosa and often gastric rugae can be traced through the pyloric canal. The rugae throughout the stomach may or may not be hypertrophied.

Aside from duodenal ulcer the incidence of bleeding lesions of the small intestine is comparatively low but duodenitis, carcinoma, solitary adenomas, tuberculous enteritis, deficiency diseases and regional ileitis are to be thought of in every case of alimentary tract bleeding. While it is generally felt that small intestinal lesions are difficult to locate, painstaking and frequent observation of the intestine during the passage of barium through it will result in a high percentage of correct diagnoses.

Malignant neoplasms, aside from hemorrhoids, are the most frequent cause of hemorrhage from the lower bowel. They usually produce fairly characteristic deformities and with proper roentgen study seldom escape detection. In formulating one's clinical opinion it should be remembered that cancer of the proximal colon produces anemia early and obstruction late, while in the distal colon obstruction is likely to occur early and anemia late. Therefore, cancer of the cecum or ascending colon should be thought of in every case of an otherwise unexplained anemia but absence of anemia does not preclude cancer of the distal colon.

Polyps of the colon may be solitary or multiple, sessile or pedunculated. They are more often found in the distal portion, bleed frequently and are potentially malignant. They are often difficult to demon-

strate, frequently requiring repeated studies before detection and are more easily disclosed by the double contrast enema.

Tuberculous enteritis and chronic ulcerative colitis are the two inflammatory diseases most often encountered in the large bowel. Tuberculosis nearly always attacks the terminal ileum and cecum and is characterized by irregular narrowing of the lumen, marked irritability and in nearly all cases evidence of active pulmonary tuberculosis. Chronic ulcerative colitis involves first the distal colon and progresses proximally. In the involved segments haustrations are absent and the walls thickened, producing a tubular appearance.

Diverticulosis occurs not infrequently in patients past forty years of age and should be suspected when lower left quadrant pain and tenderness are present. These lesions are seen as small "bud-like" protrusions from the lumen of the colon and predominate in the descending portion and sigmoid. The inflammatory reaction secondary to infection in diverticulae will sometimes produce complete obstruction and may be confused with cancer.

Fortunately amoebic dysentery is not prevalent in this locality but must be considered in the differential diagnosis of inflammatory diseases of the cecum and it may be confused with carcinoma.

It is obviously impossible in a presentation such as this to describe in detail all the clinical and roentgenological aspects of the multitude of digestive tract lesions which may bleed. Therefore, the brief mention made of many of them will suffice to remind us of the many possibilities we must consider and to emphasize the danger of considering one to the exclusion of others until a thorough roentgenological investigation has been completed.

603 Medical Arts Building.

Discussion

DR. VINCENT W. ARCHER, University: Mr. President, Dr. Barker has given us a very good cross-section of bleeding from the gastro-intestinal tract. There are just one or two phases I should like to stress. The first is the character of the bleeding. It makes a lot of difference as to how the patient bleeds. Does the patient vomit blood? Does the blood pass by bowel? If it passes by bowel, is it bright red blood or is it dark blood? Only by a very careful history can one determine the character of the bleeding, asking the patient what has gone on, whether he has ever vomited blood or had any ulcer symptoms, heartburn and so on associated with the bleeding, and so forth. This history is necessary in order that we may carefully examine the portion of the gastro-intestinal tract from which the blood may be coming. If the patient vomits bright red blood the chances are highly in favor of its coming from somewhere proximal to the pylorus. Rarely is vomited blood from lesions beyond the pylorus unless they are adjacent to the pylorus. On the other hand, if the patient passes bright red blood by bowel the chances are in favor of its coming from the colon. If the source of the blood is in the colon, Dr. Barker has showed us how we can demonstrate the cause by a double contrast enema. These procedures take a good deal of time and are costly, and many patients cannot stand the expense. If you will be careful about the history often you can save a lot of time and a lot of expense to the patient.

This was demonstrated very beautifully in a case we had at the University Hospital last week. The patient had never vomited blood. He had never passed any bright red blood by bowel. Between times the patient felt perfectly well. I felt when he came in for examination that the lesion probably was not in the stomach or duodenum because of the lack of vomited blood and the absence of ulcer symptoms, and probably not in the large bowel because he had not passed bright red blood. For that reason we examined the small bowel very, very carefully. During one period we took films every fifteen minutes and demonstrated just a little local mucosal disturbance in the small bowel, over an area of two or three centimeters with no evidence at all of obstruction. We took more films and demonstrated it two or three times both fluoroscopically and on films, and diagnosed an organic lesion, probably tumor. The patient came to operation last Wednesday. There was no involvement of the lumen of the bowel. On the mucosal surface was one little hemorrhagic area, doubtless the area from which the patient had bled, overlying a neurosarcoma 3 cm. in diameter, lying outside of the lumen. I mention this to show that you must take into consideration the character of the bleeding and then, after having roughly localized the bleeding, examine that area most carefully.

DR. BARKER, closing the discussion: I wish to thank Dr. Archer for his discussion. I am glad he brought out the importance of the history in these cases.

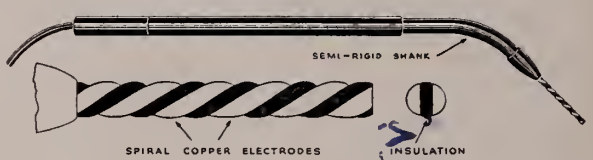
A METHOD FOR ERADICATING CONGENITAL SINUSES BY ELECTRO-COAGULATION AND STEAM—WITH SPECIAL REFERENCE TO PILONIDAL SINUSES*

PHILIP JACOBSON, M. D.,
Petersburg, Virginia.

The surgical removal of sinuses, particularly those of a congenital nature, often has been disappointing because of the frequency of recurrences. This is due to the fact that man does not have a microscopic eye and may fail to excise a small nest of cells which can become a focus of recurrence or of abscess formation. The demonstration of sinus tracts by means of forcibly injecting dyes or heavy metal compounds has been helpful but by no means adequate. In the former, the dye under pressure has been found to travel along the lymphatics, and the heavy metal compounds are either too viscid or the sinuses too small to permit their entrance.

The elimination of pilonidal sinuses is difficult, due to their mode of formation, and later, if repeated abscesses occur, the sinuses extend from their original site. That a pilonidal sinus is the result of a congenital malformation has been amply proved, which compels the realization that the sinus may theoretically reach down to and into the sacrum. A sinus tract originating in or on the sacrum cannot be distinguished from the surrounding tissues. I have had two cases of this type and was able to show, by the method I am describing, that the sinuses extended down to make a small dimple in the bone. These probably would have been overlooked, regardless of how careful or widespread the dissection might have been. For the present, attempts at locating the full extent of a pilonidal sinus have been abandoned in most clinics and resort has been made to eliminate the sinuses either by destruction with a cautery, application of caustic solutions, or the block dissection of the whole sinus bearing area.

At first blush the use of steam under pressure to define the sinus and its branches appears to be heroic and radical. But it is accomplished easily by inserting a bi-polar electro-coagulator into the sinus, turning on the current long enough to produce steam which, under pressure, can penetrate through all its passages. The coagulating unit used is the Kilmer-Jaros, made by the General Electric Company for the coagulation of the uterine cervix. The working end of this unit, which is about 1¼ inch in length and 3/16 of an inch in diameter, consists of two heavy wires separated by an insulating medium all twisted in a spiral. At the end of the spiral, nearest the operator, the wires are covered with a rubber nipple much larger than the diameter of the coagulating wires. This nipple prevents entrance of the unit to not more than the 1¼ inch into the uterine cervix. When coagulating a cervix, I observed that the onset of a bubbling noise, denoting production of steam, could be used as the criterion for terminating the coagulation and as a result of using this as an indicator of when to finish, I have had good results in the cases where this treatment was necessary in that there has been a noticeable absence of stenoses.



The Kilmer-Jaros Bipolar Coagulating Unit

The rationale of treating the uterine cervix and pilonidal sinus in the same manner suggested itself since both are tubes lined with epithelium. Destruction of the epithelium of a pilonidal sinus could be achieved, partially by coagulation and the rest, so affected by the hot steam, will be destroyed or identified so it can be removed.

The procedure, as I stated, is simple and requires little skill. If local anaesthesia is to be used, a large area must be infiltrated deeply to include the periosteum of the sacrum. The unit is placed into the opening, which may have to be enlarged to admit its entrance, and pushed up far enough until the nipple is against the skin, where it is held firmly in order to prevent the escape of steam. If more than one opening is present, the largest should be chosen first and the others later, if it is found that no steam escapes from them. Current of moderate intensity is turned on. In a few seconds the bubbling will be heard and the involved area will distend. This rarely requires more than twenty seconds

*Read before the annual meeting of the Medical Society of Virginia, at Virginia Beach, October 6-8, 1941.

and usually not more than ten. Then with the unit still in place, the skin overlying it is opened, either with the cutting current or the scalpel, and the electrode is removed. The sinus has the grayish blanched appearance typical of coagulated areas. Sometimes the apertures of branching sinuses may be seen very clearly when the skin is opened but it is unnecessary to do more coagulation. With the loop cutter the main sinus is resected until healthy tissue is seen. It is at this point that one begins the search for the collateral sinuses. These present themselves as small blanched, darkened areas in the healthy tissue, sometimes only pin-point in size, which are in reality the openings of branches through which steam has passed and destroyed the lining. One should consider these as small tubes which must be removed piecemeal. A small segment of about one-eighth of an inch thickness is removed by the loop cutter and if the spot is still present another segment is removed until normal tissue is exposed. Each branch of the sinus must be attacked separately until nothing but normal tissue is left. In the two cases I mentioned, branches reached down into the periosteum of the sacrum. After several segments had been removed it was necessary to chisel away a small piece of bone in order to eradicate the end of the sinus tract. I feel now, that no matter how carefully a block dissection might have been done, these would have been left to foster recurrences.

The whole operation requires little time and the amount of tissue removed is very much less than that of block dissection. Healing by granulation is encouraged by keeping the area scrupulously clean. This is best accomplished by bathing in a tub twice a day. In addition, the granulating surface should be inspected frequently under a magnifying glass for pieces of hair or small islands of epithelium which can be turned under through the rapid proliferation from the skin margins at the edges of the wound. Either may be buried as the depression fills up to become the focus for an abscess.

Patients undergoing this procedure are ambulant and may return to work in one or two days. Healing is finished in three weeks but in one case four weeks were required. There are no large dressings and the quantity of secretion is small. Eight cases have been done in this manner over a period of three and one-half years. All were in men and there has been no recurrence. The scars are small, soft, and pliable. One case is of special interest because it suggests the thought that the introduction of steam, under pressure, alone may suffice to cure the sinuses without doing any more.

This is the case of a white man, about six feet tall and weighing 240 pounds, who came to me about nine years ago with an abscess in a pilonidal sinus. The sinus had been opened elsewhere on two occasions, the first, about a year and a half, and the second, about six months before his coming to me. The abscess was opened and he was advised to return for operation when the inflammation had subsided. This he failed to do but he did return two years later with another abscess. After opening this he again was given the same advice, and, although abscesses recurred which had to be opened, he persistently refused operation. During all this time he constantly had a small amount of drainage from this area.

However, three years ago he returned with another abscess in the sinus, which I opened, evacuating a large amount of pus. The inflammation subsided rapidly, as usual, but when he returned on the tenth day I suggested that I might try to dispose of the sinus in the office by coagulation, to which he assented. The area was infiltrated with novocaine and the unit inserted in the aperture. The bubbling and distention took place quickly and steam could be seen coming from two small holes, about three-quarters of an inch above the main opening. However, the area must have been incompletely anesthetized as he complained of considerable pain and I had difficulty in keeping him on the table. I could go no further than open the skin over the unit as he refused to have me continue the operation. In fact, he disappeared altogether until his return on May 16, 1941, with an entirely different complaint. I questioned him about his sinus and he informed me it drained for a month, then closed up and has given him no trouble. He permitted me to examine the area but no trace of a sinus could be seen. A small, soft linear scar, of about the same consistency as the surrounding tissues, was present. There was no opening of any kind, not even a dimple.

It is not unusual for these sinuses to disappear when incision alone is made into them but in this case the long history of repeated incisions and drainages render this improbable. It provokes, therefore, the speculation that a sinus may be eliminated

by the introduction of steam alone, and I am hoping for another case in which I can try this experiment.

The idea is reasonable; and if steam can be made to penetrate deeply enough to destroy all the layers of cells, union of the tissues should follow in one of two ways. If all the bacteria are killed along with the cells, absorption of the dead tissue can take place in the same manner as the cells destroyed through electro-coagulation of blood vessels. On the other hand, if sloughing should occur the way is open for healing by granulation.

DISCUSSION

DR. R. L. RAIFORD, Franklin: I have listened with much interest to the very excellent presentation of this subject by Dr. Jacobson, and I wish to say that it certainly appears to open up a more hopeful method of handling this type of work.

All of us realize that the handling of pilonidal cysts has not always been a joyous procedure to us or to the patient either. I became interested in surgical coagulation a good many years ago in connection with the treatment of the infected uterine cervix. Up until that time, as far as I was informed, nothing easy had been devised to get rid of an infection around the cervix; either some form of surgical procedure or what was known as medical gynecology was ordinarily practiced.

Some twenty or more years ago we began to realize that an infected cervix was not only a local disease but a source of systemic toxemia. I saw many patients with infection of the cervix that was certainly causing much deleterious condition of the system. I began to use surgical diathermy, as Dr. Jacobson has described, to treat this condition, and I still get better results by this method than by any other I have seen used, in spite of the fact that I believe the actual cautery is more popular among surgeons in general in giving this treatment.

By this process, the most beautiful appearance, even in those cases where there has been a considerable laceration of the cervix, is obtained, and all infection can be cleared up. While I have had no experience in treating sinuses by this method which Dr. Jacobson has so ably presented to us, I can easily see how it would work out admirably in the treatment of such cases.

It has been my experience in the treatment of pilonidal cysts that we have to keep these patients in the hospital quite a while, where we dissect out all of the collateral sinuses leading into the main sinus. Dr. Jacobson's method is especially to be commended for its time-saving feature.

I wish to congratulate him on having introduced and presented this interesting and instructive subject, and I am certainly going to try his method in the next case that comes under my observation.

DR. JACOBSON, closing the discussion: The principle of this procedure is the penetration and dilatation of a sinus by live steam, produced by a bi-polar coagulating unit working at the opening of a sinus. Perhaps any bi-polar unit would do, but I prefer the one mentioned. The coagulation of the lining cells by the hot steam defines the tract as well as sterilizes its contents.

This destruction and sterilization must have been fully obtained in the case which I described and I believe this idea may be used in lesions where an easily controlled, quickly acting sterilizing medium would produce sloughing or absorption. Except that too much pressure may be obtained and that its use is indicated only in benign lesions and infections, the use of steam can do no harm in closed spaces because its effect ceases the instant the pressure is released.

SICKLE CELL ANEMIA*

JAMES P. BAKER, M.D.,
Richmond, Virginia.

The first case of sickle cell anemia was reported by Herrick[1] in 1910. The second case ever to be described was reported in 1911 in the VIRGINIA MEDICAL MONTHLY, the organ of this Society. The author of this paper was Dr. B. E. Washburn,[2] who was then a senior medical student at the University of Virginia. There were only two other cases[3, 4] described in the ensuing twelve years, with the result that it was considered a rare disease, an impression which one still gets from many textbook discussions. Sydenstricker and his associates[5] first demonstrated, in 1923, that this was not an infrequent disease. Looking back to the rather voluminous literature of the past fifteen years, and looking around ourselves in clinics and hospitals, we can say that it is quite a common disease. Looking forward, I hope that we can arrive at a better understanding of it. For the present, however, it presents many baffling problems.

Although the second paper on this subject was published in the VIRGINIA MEDICAL MONTHLY, it is the only one ever to appear in this Journal. For that reason, as well as to call attention to the prevalence of the disease, I was particularly anxious to present this paper before this Society.

I stated just now that sickle cell anemia is a

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Read at the annual meeting of the Medical Society of Virginia, Virginia Beach, October 6-8, 1941.

common disease. Far more common is the occurrence of sickled red blood cells. In fact, such cells can be demonstrated by appropriate technique in about 7 per cent of all Negroes, but these people are usually normal in other respects and show no anemia. So we must distinguish between the conditions "sicklemia", where sickle cells may be demonstrated in the blood of healthy people, and "sickle-cell anemia", the disease under discussion. Although we cannot say that sickle cells are found only in Negroes, such a statement is true for all practical purposes. There have been a few reports of sickle cells in people with no demonstrable Negro ancestry, and there seems to be no good reason why they should not occur in other races. However, sickle cell anemia must be considered a disease of the Negro race.

One could spend a great deal of time in conjecture about these sickle cells, why they assume such queer shapes, why they function normally in some people and are destroyed so rapidly in others. The transformation of such cells from a normal to an abnormal shape under certain conditions has been the subject of many studies, and has advanced our knowledge of the disease. Such considerations are beyond the scope of this paper, however, for I want to speak primarily of the wide variety of symptoms the disease may cause and of procedures that will be helpful in diagnosis. I want to say something about treatment, too, but that will necessarily be inadequate.

First of all, we might consider the characteristics of the blood, for these represent the outstanding abnormalities in the disease. The degree of anemia may be moderate or severe, the red blood cell count falling to levels of 1,000,000 per cu. mm. with corresponding levels of hemoglobin. The degree of anemia may change very rapidly, e.g., a patient with 3,500,000 red cells may show a drop to 1,500,000 within a few days. The anemia is hemolytic in type, i.e., the red cells are destroyed within the blood stream as shown by an elevated icterus index. Often this hemolysis is so rapid that the patient is markedly jaundiced. There is no lack of blood-building materials and no failure of the bone marrow, as witnessed by the high reticulocyte counts and the appearance of nucleated red blood cells. The leukocyte count is nearly always elevated, often as high as 25-30,000. The most striking thing about the blood, however, is the finding of sickled red blood cells. Often these are crescentic or sickle-shaped but they may be oat-shaped or almost any shape. Now if these cells retained their abnormal shapes when spread out on a slide, the disease would be recognized more often. However, when exposed to air, they nearly all become round and appear as perfectly normal cells. As a result, a blood smear prepared in the usual way may show few or no sickle cells. However, if the cells be kept away from the air in a sealed moist preparation, they retain or assume an abnormal shape. The simplest

Fig. 1.—Blood from a patient with sickle cell anemia exposed to the air before drying. Note the absence of sickle cells.

way to do this is to put a small drop of blood on a glass slide, drop a cover slip on it and seal around the cover slip with vaseline or melted paraffin. The sickle cells may be seen in such a preparation within a few minutes to a few hours. I can best demonstrate this difference in shape with two lantern slides. (Fig. 1 & 2). This change in shape may be repeatedly reversed—if the cells are exposed to air, they become round, if they are sealed from the air, they become sickled.

The disease has been recognized in infants, children and adults. Some of the subjects do not survive infancy, usually dying of some infectious disease. Those who are not diagnosed until late child-

hood or maturity usually give a history of long standing symptoms referable to the disease. Most affected individuals die at a rather early age, so that few are seen above thirty.

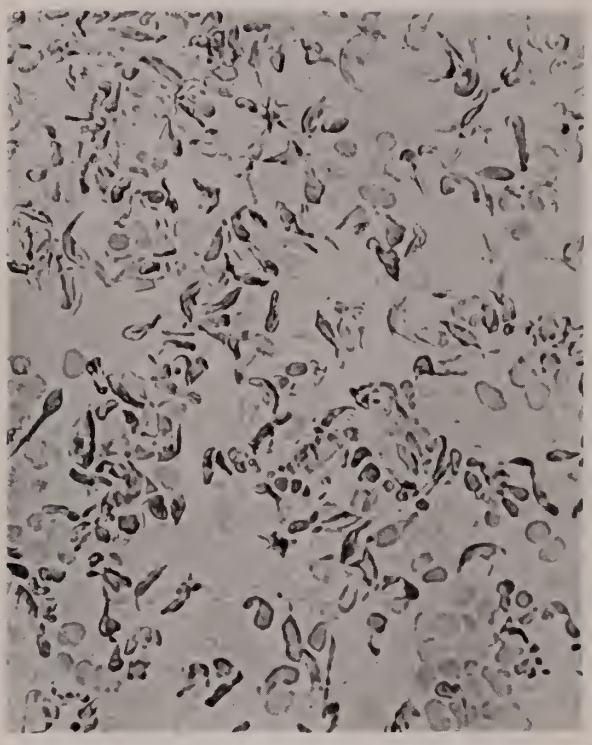

Fig. 2.—Blood taken from the same patient, but sealed under a cover slip to prevent drying.

The symptoms and signs of the disease are so numerous that they cannot all be mentioned. They may be referred to any part of the body, and it is this variability that makes diagnosis so difficult. In general, these people are in poor health. They are often stunted in growth and poorly nourished. They tire easily and are susceptible to various infectious diseases.

The more dramatic symptoms we speak of as crises, which are often coincident with rapidly developing anemia and accompanied by fever. One of the commonest complaints is of severe muscle or joint pains which may recur many times a year. There may be a variety of nervous system manifestations such as drowsiness, stupor, hemiplegia, transitory blindness, double vision, convulsions, etc. We have recently seen two patients with severe headache, stiff neck, fever, leukocytosis—all the signs of meningitis—who had perfectly normal spinal fluids and whose symptoms subsided promptly without treatment.

Organic heart disease is often suspected on examination, but at autopsy there are no constant changes except those explainable on the basis of anemia. Enlargement of the spleen is present early in the disease, but this is followed later by a shrunken fibrotic spleen.

Patients with this disease frequently present symptoms which suggest an acute surgical abdomen, and are subjected to operation which reveals no abnormalities. The intense abdominal pain which may localize over favorite sites for operation, the muscle spasm, fever and leukocytosis present a picture which is difficult to reconcile with a medical condition.

Chronic leg ulcers in negroes should arouse suspicion of this disease, for they occur in many of the subjects. Such ulcers are most resistant to treatment and may enlarge slowly for years.

A variety of changes in the bones has been reported by Diggs and his associates.[6] Osteoporosis of some bones, sclerosis of others, may be found. We have seen, and there have been reported, cases

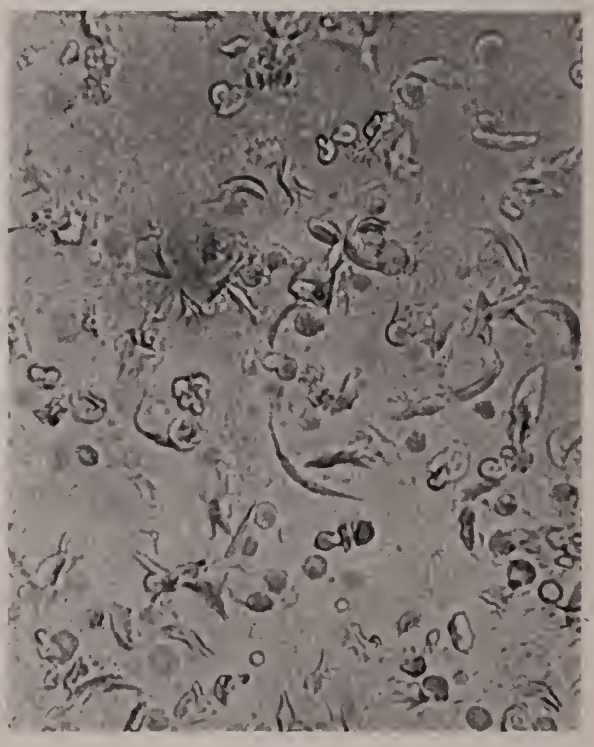

Fig. 3.—Sealed preparation of blood from a case of sickle cell anemia.

where a diagnosis of osteomyelitis was made from clinical symptoms and signs, but the bone found to be perfectly normal at operation.

You will certainly ask how all these symptoms

could occur as a part of sickle cell anemia. It is not possible to give a complete explanation. There has been enough pathological study, however, to show a probable mechanism. When one considers the shape and size of the sickled erythrocytes it is easy to see how they might cause stasis of blood flow through capillaries, even blocking capillaries (Fig. 3). Anoxemia resulting from such stasis would accentuate the deformity of cells. This has been demonstrated in wet preparations of blood that are sealed off from the air. This vicious cycle of stasis, anoxemia, further sickling and stasis probably results in vascular injury with thrombosis. If the thrombus be of sufficient size and collateral circulation be inadequate, destruction of tissue will occur. This has been demonstrated[7] in those cases who have had brain injury sufficient to cause death.

When one comes to the treatment of this disease, there is very little to be said. All of the blood-building substances (iron, liver, etc.) have been used with but little effect. After all, the defect here is excessive hemolysis and not a failure to make new blood. Splenectomy has been done in a number of cases with equivocal results. The painful crises are almost always self-limited, and require only symptomatic treatment. Elastoplast bandages have seemed to hasten the healing of chronic leg ulcers. Transfusion is indicated in those patients who have profound crises of hemolysis.

SUMMARY

Sickle cell anemia is a common disease in the Negro race. It may give rise to symptoms and signs referable to almost every part of the body. It should be suspected in Negroes who have crises of pain, who are anemic and have jaundiced sclerae, or who have leg ulcers. The deformity of the red cells can best be demonstrated in sealed wet preparations of the blood.

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DISCUSSION

DR. WILLIAM B. PORTER, Richmond: This presentation by Dr. Baker is a very timely one, because it brings to our attention a problem which is ever present and which is a very challenging one. It is challenging because of its bizarre manifestations, the clinical state presented by these individuals mimicking practically any one of a number of diseases. It is challenging, moreover, because of the lack of fundamental data concerning the nature of the disease, and what to do about it. Hence, it represents one of those unique problems challenging the profession of the Southern States, which we should take as a serious responsibility.

There are several specific points upon which I should like to comment. The first of these represents the differentiation between the symptoms occurring with hemolytic crises with bizarre clinical symptoms and signs, and in certain of the acute infectious diseases, particularly rheumatic fever, acute joint and bone disease and acute intra-abdominal disease. In both instances, fever and leukocytosis are present. The leukocytosis with the other constitutional symptoms frequently demands a positive decision between an acute surgical malady versus the symptoms of sickle cell disease.

We have been interested in attempting to establish an essential differential point, and with this in mind we have used the reticulocyte count. In the hemolytic anemia of sickle cell crisis a high reticulocyte count, varying from 12 to 25 per cent, is usual; whereas, in the other diseases above-mentioned with leukocytosis, there is no appreciable increase in the number of reticulated red cells.

I will not say anything more about this interesting disease, but I should like to suggest that the President have one of our guest speakers, Dr. James E. Paullin of Atlanta, discuss this disease for he has been intimately associated with it for many years, and has worked with Dr. Sydenstricker who has contributed much to our knowledge of sickle-cell anemia.

DR. JAMES E. PAULLIN, Atlanta, Ga. (upon invitation): It is with a great deal of pleasure that I again have the privilege of attending your annual meeting and renewing old acquaintances.

Dr. Baker has brought to your attention a most interesting blood dyscrasia and his discussion of our knowledge and the clinical manifestations of sickle-cell anaemia is most enlightening. There is very little that I can add to his excellent discussion of the subject. However,

since I have been very much interested in this disease for many years, particularly since Sydenstricker brought it so forcefully to our notice, there are just a few points made by Dr. Baker that I would like to re-emphasize. The occurrence of attacks of acute abdominal pain in patients with sickle cell anaemia not due to acute infection within the abdomen is not unusual. On the colored medical service of the Emory University Division of the Grady Hospital, on several occasions the differential diagnosis between this disease and acute appendicitis has been made with difficulty. It therefore behooves us to study carefully the blood of young negro patients for evidence of sickle cell anaemia before subjecting them to surgical operation for the relief of abdominal pain, particularly when it is associated with nausea, vomiting, fever, muscular rigidity and a leucocytosis. The discovery in the blood smear of sickling of the red cells, normoblasts and a marked increase in the reticulocytes should make one suspicious of a crisis occurring in sickle cell anaemia rather than an acute abdominal infection.

Enlargement of the spleen cannot always be demonstrated in these cases, and in a few of the patients who have been subjected to splenectomy, in our clinic, for relief from the disease, the spleen has been smaller and softer than normal. Splenomegaly does not always accompany the disease.

The diagnosis of osteomyelitis is occasionally made in these patients because of severe pain in the extremities and finding on examination tenderness along the shaft of the bone frequently associated with the presence of a superficial ulcer of the skin. Here again a careful examination of a fresh preparation of the blood, together with a study of a stained smear, will establish the diagnosis.

Lastly, the occurrence of cardiac enlargement (hypertrophy) in so many of these children without any evidence of heart disease or hypertension is difficult to explain. We are prepared to accept the presence of the hypertrophy in patients who have had, over a period of years, a rather severe anaemia. I have no satisfactory explanation to offer for hypertrophy occurring in those patients before a grave anaemia exists; it is generally accepted that deficient oxygen supply is the etiological factor, yet this cannot always be demonstrated. I would like to ask Dr. Baker if he has an explanation for this.

Again I wish to thank you for this opportunity of appearing on your program.

DR. BAKER, closing the discussion: I should like to thank Dr. Porter and Dr. Paullin for their discussion of this paper and for elaborating on certain aspects of the disease which are very important.

As Dr. Paullin mentioned, we believe this is a hereditary disease. I do not know that the exact mechanism of heredity has ever been shown conclusively. We have been engaged on the heredity aspect, among other things, in studying a number of families. Dr. Roscoe Hughes and I were studying that last year when he was called to active duty in the Navy.

Dr. Paullin spoke of the small size of the spleen. I did not intend to imply that contraction was due to any known factor, but mentioned it as one of the pathological findings.

As regards cardiac hypertrophy in very young children who have not had crises of hemolysis or very severe anemia, I do not know. I refer particularly to the group who have had numerous attacks of muscle and joint pain and were thought to have rheumatic fever and to have developed rheumatic heart disease. That is the group I spoke of as having cardiac signs and symptoms. I cannot explain the cardiac hypertrophies in the very young people whom Dr. Paullin mentioned.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was a 22 year old colored multipara with two previous pregnancies who had attended a prenatal clinic at monthly intervals for the first five months. During the fifth month the blood pressure was 150/90, although the rate of weight gain had been normal and there were no unusual complaints. When the elevation of blood pressure was detected, the patient was advised to take a tablespoonful of salts daily and to rest in bed for one or two hours each day. Three weeks later the blood pressure was 140/90. Two weeks following the last visit to the clinic, a physician was called to see the patient because of abdominal pain and vaginal bleeding. The uterus was found to be "board-like", the blood pressure was 120/80, and the patient was not in shock. A diagnosis of premature separation of the placenta was made and the patient was referred to a hospital.

The patient was admitted to a hospital at 5:30 A. M., with vaginal bleeding. An examination showed the cervix 4 cm. dilated. Following consultation, the cervix was manually dilated and a six and one-half months stillborn fetus was delivered by version and extraction under gas-oxygen anesthesia. Following delivery, excessive bleeding occurred and pituitrin and ergot were given.

One hour postpartum 1000 cc. of Ringer's solution and morphia gr. ¼ were given. The patient was typed for transfusion, but the pulse became rapid and irregular and the patient died two hours and fifteen minutes after delivery.

COMMENT

This has been classified as a preventable obstetric death, because of the failure to employ one of the generally approved methods for the treatment of premature separation of the placenta. *Manual dilatation of the cervix is a shocking and usually an ill-advised obstetric operative procedure, and should practically never be employed.*

The first essential in the treatment of premature separation of the placenta is the treatment of shock and the replacement of blood loss by intravenous fluids, plasma, and whole blood, and the administration of morphia for relief of pain. After these measures have been utilized, delivery may then be accomplished by Cesarean Section, or labor may be induced and vaginal delivery anticipated. Some obstetricians always advise delivery by Cesarean Section for premature separation of the placenta, while others invariably deliver these patients through the vagina, while still others, of whom the present reporter is one, feel that these patients must be individualized and the method of delivery chosen which seems to offer the best outlook for the mother. If the vaginal method of delivery is chosen, the membranes are ruptured, and at times scalp traction may be employed by a Willet forceps, a vulsellum, or a cervical tenaculum. In addition a tight abdominal binder is usually applied and pituitrin or pitocin *in small dosage* may be given hypodermically or intranasally. While labor is progressing fluids and blood usually have to be administered intravenously depending upon the condition of the patient and the amount of blood loss. One such patient managed in this manner recently, received 3875 cc. of blood during labor.

The danger, however, is not passed following the delivery of the baby and the placenta. Occasionally utero-placental apoplexy (intramuscular hemorrhage) occurs in association with premature separation, and in these instances the uterus remains atonic because of the dissociation of the muscle fibers by the hemorrhage in the wall of the uterus. In one case of this nature recently a spontaneous rupture of the uterus occurred with extrusion of the fetus and placenta into the abdominal cavity. Here bleeding continues postpartum and contraction often fails to occur in spite of oxytocics and uterine tamponade, so that hysterectomy may have to be performed. The danger of postpartum hemorrhage from atony due to dissociation of the uterine muscle is perhaps the best reason for delivering many of these patients by section. At the time of section after the uterus has been emptied of the fetus and placenta, if the uterus fails to contract it may be removed immediately. The administration of fluids, plasma or blood may have to be done before, during and after the operative procedure. The decision as to when to remove the uterus in these cases often taxes the judgment of the most experienced obstetricians.

Obviously in the case under consideration no effort was made to administer fluids, blood or plasma before or during delivery. In addition, the patient was immediately delivered by the hazardous procedure of accouchement forcé, with its attendant shock, cervical lacerations and hemorrhage. This method of delivery would be a dangerous one even if the patient had not already been suffering from blood loss. Following such a method of delivery the cervix should have been inspected for lacerations, and if any bleeding lacerations were found they should have been repaired. Armed with the knowledge that any bleeding which did occur was coming from the uterus, and if it could not be controlled by oxytocics and packing, then a hysterectomy should have been done. It is felt, in view of the ill-advised operative delivery, the failure to administer fluids and blood earlier, the failure to inspect the cervix and to repair any bleeding lacerations in it, and the failure to pack the uterus, that this should be classified as a preventable death.

Public Health Statistics

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for February, 1942, compared with the same month in 1941 and for the period of January through Feb-

ruary, 1942, compared with the same period in 1941 follows:

	Feb. 1942	Feb. 1941	Jan.-Feb. 1942	Jan.-Feb. 1941
Typhoid and Paratyphoid	7	10	38	18
Diarrhea and Dysentery	106	38	225	85
Measles	541	3,332	1,385	4,182
Scarlet Fever	159	171	354	365
Diphtheria	46	34	117	74
Poliomyelitis	0	1	0	4
Meningitis	15	8	32	14
Undulant Fever	0	1	2	3
Rocky Mountain Spotted Fever	1	1	1	1
Tularaemia	1	5	13	13

THE PHYSICIAN AND THE NUTRITION PROBLEM

The science of human nutrition has made great advances during the past twenty-five years. Before 1912, the physician's main concern was to see that his patients received a proper supply of fats, carbohydrates and proteins. Very little was known of the importance of minerals, and the word "Vitamin" was yet to be coined.

Scientific progress, in the field of nutrition has been followed by an increased lay interest in this subject. On the part of the more intelligent there has been a real desire to obtain authoritative information free from fads and fallacies. The family physician is playing an important part in the promotion of better nutrition for his patients because he recognizes his responsibility in this connection.

However, it recently was stated that approximately $100,000,000 is being spent annually for vitamin concentrates without prescription. While this is real evidence on the part of the average person of a general desire to improve his nutritional status, it also indicates that the physician's advice not only on nutrition but on other factors influencing the attainment of optimum health often is being overlooked.

In the application of nutritional knowledge as it affects the prevention and treatment of disease, it is essential that the leadership of the family physician be sought. The doctor's sympathetic support in both individual and community nutrition problems definitely is connected with the solution of the national malnutrition problem. The practicing physician realizes that poor nutrition is by no means confined to those of low economic status. He knows that many of his private patients suffer from subclinical deficiencies due to lack of medical guidance and poor food habits.

Public health efforts as well as commercially inspired pronouncements, have aroused a desire on the part of many individuals to improve their general health by applying proper nutritional principles. Nevertheless, efforts to stimulate interest in this important preventive measure cannot meet with the success desired unless individuals somehow are made to realize that spontaneous dietary efforts on their part cannot safely be substituted for the advice which the family doctor is in a position to give.

Much is being accomplished by physicians' efforts to induce patients to form good food habits. The doctor can impress upon the patient that a proper selection of foods is of much more importance in the average case than the use of vitamin concentrates.

Mental Hygiene Activities

Mental health during wartimes commands the attention of all thinking people. The morale of the citizens of the United States needs close guarding and constant care from all those that wish to crown the efforts of the nation with success. This morale is a mental attitude, resulting to large extent from physical well-being but even in greater degree from the type of thinking which permeates the mass. It is the altruistic thinking, that thinking which goes on on the borderline of consciousness; while the machinist works at his lathe or the painter automatically weilds his brush, he conducts a thought life which diverges from the practical, paralleling for a time his actions, and then again diverging sharply but if of value finally returning to color some future action. This altruistic thinking determines the morale. It is what leads to strikes and to rebellion as well as concerted action, and if forces of destruction are allowed to play on it unhampered, constructive plans for an integrated national behavior will degenerate into confusion.

Therefore, it behooves us all now to study the possible behavior disorders which will face us when attacked—when Norfolk is bombed or Richmond is under siege—as well as the insidious influences that warp the preoccupations of us all and determine our spirit.

During the week of April 22nd there will be a meeting of the Virginia Conference of Social Work conducted at the Jefferson Hotel in Richmond. This is the annual meeting of this organization but the programs are for everyone and especially for the medical profession.

On the night of Wednesday, April 22, 1942, in the auditorium of the Jefferson Hotel, the public meeting will be held, under the joint auspices of the Virginia Conference of Social Work and the Mental Hygiene Society of Virginia. The subject for discussion will be "Propaganda and Its Antidote." The speaker of the evening will be Dr. Charles C. Burlingame, Psychiatrist in Chief of the Neuropsychiatric Institute of the Hartford Retreat, Hartford, Connecticut, and Chairman of the Committee on Public Education of the American Psychiatric Association. He has made a special study of propaganda and its effects, so is well qualified to present the psychiatric approach to this subject. He will be followed by Mr. Lee R. Pennington, an Inspector especially assigned to this meeting by the Federal Bureau of Investigation, Washington, D. C. He will also discuss the effects of propaganda and will suggest practical methods for combating it. After these talks there will be a general discussion. It is hoped that Governor Darden, Chief of Civilian Defense for the State of Virginia, will be present to lead the discussion.

On Friday and Saturday morning of that week, the 24th and 25th, the Mental Hygiene Section will present a program based on "Mental Health in Wartimes." On the morning of the 24th, Dr. Douglas A. Thom, Professor of Psychiatry at Tufts Medical School, Boston, Mass., author of several books regarding the problems of children and of youth, will speak on "The Effect of War on the Armed Forces." Dr. Thom was in the last World War and has made a special study of the war neuroses. This paper will be discussed by Dr. Finley Gayle of Richmond. Following this there will be a talk by Dr. James B. Pettis, former Clinical Director of the Western State Hospital, Staunton, Virginia, and now a Lieutenant-Commander in the United States Navy located at Norfolk, Virginia. Dr. Pettis will talk on "The Effect of War on the Mental Health of Civilian Population" and his paper will be discussed by Dr. Joseph E. Barrett of Southwestern State Hospital. On the afternoon of the 24th the "Effect of War on Delinquency and Crime" will be the topic for discussion. Dr. Harvey DeJarnette Coghill will open with a talk on "The Effect of War on the Behavior of Children." Dr. Coghill is well known throughout the State for his studies of the effect of war on the behavior of children. His paper will be discussed by Dr. Frank Wilson of Norfolk, Pediatrician. Following Dr. Coghill's remarks, Dr. James A. Nolan, Professor of Sociology at George Washington University and now Director of the Washington, D. C., Criminal Justice Association, will talk on "Crime Control in Wartimes." The discussion of his paper will be opened by Mr. William J. Barron, Assistant Dean of the Law School of the University of Virginia.

On Saturday morning there will be a roundtable discussion based on "The Control of Mental Health in a Defense Area." This will be especially set up with Norfolk and Richmond in mind. The opening talk will be by Miss Sue R. Slaughter, Director of Family Welfare Assn., Inc., in Norfolk, Virginia. She will talk on "Social Problems Which Affect Mental Health in a Vital War Area." She will be followed by Dr. Victor Vogel, who is in charge of the Mental Health Division of the United States Public Health Service, Washington, D. C. He will talk on "The Organization Necessary for the Protection of Mental Health in a Vital War Area." Following this second speaker, there will be a roundtable discussion by all speakers of the program, discussing Dr. Vogel's paper and making plans to meet the present situation in our State and those situations which are to be expected.

It is hoped that all the members of the Medical Society of Virginia can be present at this meeting to take part in the discussions.

DAVID C. WILSON, M.D.

Woman's Auxiliary
to the
Medical Society of Virginia

President—MRS. E. LATANE FLANAGAN, Richmond.
President-Elect—MRS. H. W. ROGERS, Norfolk.
Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.
Corresponding Secretary—MRS. A. S. LILLY, Richmond.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

Petersburg Auxiliary.

The efforts of the Petersburg Medical Auxiliary for the past two years have been directed toward securing funds with which to meet their pledge of $900.00 to the new Petersburg Hospital. In January a check for $350.00 was forwarded the Hospital,

making a total of $550.00 which the Auxiliary has contributed to the new building.

On February 20th, a tour of outstanding homes in Petersburg and vicinity was conducted by the Auxiliary. A net sum of $100.00 was realized, which will be applied to the Hospital fund.

For the past several years the linen supply of the Petersburg Hospital has been replenished by a shower sponsored by the Auxiliary. In the afternoon of February 24th the shower was given at the Nurses' Home. Miss Jaunita Loot wrote and directed a thought-provoking and amusing skit, entitled "Ten Sheets in the Wind", which was presented by the nurses. The parlors were beautifully decorated with flowers and delicious refreshments were served by the freshman class in dietetics. Miss Harriett Patterson, superintendent of the Hospital, estimated the value of the linen received at $315.00. The contributions were made by various organizations and citizens of the city, both white and colored.

Several members of the Auxiliary served in booths during the "March of Dimes". The Auxiliary has faithfully worked in the Red Cross, four of its members being supervisors in the surgical dressing work room.

LOUISE J. HAMNER (MRS. J. E.)

Mid-Tidewater Auxiliary.

The January meeting of this Auxiliary was held in the home of Mrs. M. H. Harris of West Point, with Mrs. Hawes Campbell, president, presiding. This was an outstanding meeting, two new members being welcomed.

The treasurer reported that about fifteen dollars had been realized from the doll which was won by little Patricia Cox, now of California.

After the business session, the president introduced Mrs. Fred Alexander and one of her co-workers, Miss Mary C. Atkins, of Richmond, who gave much helpful information on the progress and possibilities of Cancer Control in King William County.

A sea food luncheon as guests of the doctors followed the meeting.

VIRGINIA PEARSON (MRS. PAUL)
Publicity Chairman.

A.M.A. Convention.

A few more months, and the members of the Woman's Auxiliary to the American Medical Association will be arriving in Atlantic City, New Jersey, for their Annual Convention, June 8-12.

Have you made your reservations? If not, send your request *at once* to Haddon Hall, Atlantic City, New Jersey.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligations in return for the courtesy of those sending us the same.

Methods of Treatment in Postencephalitic Parkinsonism. By HENRY D. VON WITZLEBEN, Elgin State Hospital, Elgin, Illinois. New York. Grune & Stratton. 1942. 164 pages. Cloth. Price $2.75.

Surgery of the Ambulatory Patient. By L. KRAEER FERGUSON, A.B., M.D., F.A.C.S., Lieut.-Commander, Medical Corps, United States Naval Reserve; Assistant Professor of Surgery, University of Pennsylvania; Surgeon, Philadelphia General Hospital and Doctors Hospital; etc. With a Section on Fractures by Louis Kaplan, A.B., M.D., F.A.C.S., Associate in Surgery, University of Pennsylvania; etc. J. B. Lippincott Company. Philadelphia. 1942. xvi-923 pages. 645 Illustrations. Cloth. Price $10.00.

Cardiac Clinics. A Mayo Clinic Monography. By FREDRICK A. WILLIUS, B.S., M.D., M.S. in Medicine, Head of Section of Cardiology, Mayo Clinic, and Professor of Medicine, Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota, Rochester. St. Louis. The C. V. Mosby Company. 1941. 276 pages. Illustrated. Cloth. Price $4.00.

The author has attempted to cover the field of the essential types of cardiac and vascular disease by reporting a series of illustrative cases. The case reports are followed by a pertinent discussion of the clinical problems represented. The reviewer feels that the cases selected are excellent illustrations, and that the discussions in most instances are reasonably complete. The reviewer cannot agree with some of the deductions, nor does he feel that there is complete justification for the enthusiasm which is shown for certain therapeutic procedures recommended.

This type of medical literature offers many advantages for those who are not in contact with a large mass of clinical material; on the other hand, this volume has the usual fault inherent in this class of publication, that is, much repetition. The book can be recommended particularly to practitioners of medicine who wish to familiarize themselves with the clinical approach to the usual cardiac problems, but it will serve its most useful purpose as material for a seminar discussion where several phy-

sicians can review the material and discuss the cases, express their own personal opinions, and, finally, review the opinions of the author.

This volume is a very good example of its kind, and can be recommended to all those interested in problems of cardiovascular disease.

W. B. P.

The March of Medicine. New York Academy of Medicine Lectures to the Laity, 1941. New York. Columbia University Press. 1941. xiv-154 pages. Cloth Price $2.00.

This volume consists of a series of lectures sponsored by the New York Academy of Medicine, and are supposedly designed for the laity. The reviewer has great respect for the education and intelligence of the laity of New York City if they were able to comprehend some of these talks. Although they are all scholarly, sometimes painfully so, there are really only two easily comprehended by anyone not thoroughly conversant with medicine and its history. The list of lectures is as follows: Humanism and Science by A. Gregg, Paracelsus in the Light of Four Hundred Years by H. E. Sigerist, Psychiatry and the Normal Life by W. Healey, Philosophy and Therapy by I. Edman, The Promise of Endocrinology by O. Riddle, and What We Do Know About Cancer by F. C. Wood.

Of these, the articles on endocrinology and cancer are of definite interest to the laity as well as to the physician. The life of Paracelsus is well done and worth reading. Several of the others would be dry reading to anyone.

R. J. M.

The Toxemias of Pregnancy. By WILLIAM J. DIECKMANN, M. D., Associate Professor of Obstetrics and Gynecology, The University of Chicago; Attending Obstetrician, The Chicago Lying-In Hospital and Dispensary; etc. St. Louis. The C. V. Mosby Company. 1941. 521 pages. With fifty text illustrations and three color plates. Cloth. Price $7.50.

This is truly a book of science, dealing with the Toxemias of Pregnancy, one of the big three in the causes of maternal deaths in this and all nations. It is weighty in its exhaustive review of all the vast expermental data which has accumulated on the subject. Chemist, physicist, and pathologist will find it absorbing, the specialist in obstetrics will find it interesting, the general practitioner will find it dull.

The first portion of the book takes up the conflicting ideas regarding the typical pathological lesions of eclampsia. Here at least one would hope to find some agreement for one usually expects the post-mortem table to answer all questions with authority but the lesions of eclampsia cannot be said to be specific, not uniform in all cases coming to autopsy. The intricate problems related to water balance in relation to mineral and protein metabolism is discussed in some fifty pages. Blood pressure changes and newer tests for anticipating blood pressure rise in pregnant patients as judged by their response to "cold" are described in detail. About fifty pages are devoted to renal physiology and an excellent review it is, too. The etiology of the Toxemias receives its usual endless expressions of opinions and is concluded with the latest and perhaps most promising speculations of all, namely the role of the endocrine glands in relation to the development of eclampsia. The last half of the book is devoted to the clinical aspects and treatment of the toxemias. The author whose personal contributions to the knowledge of the Toxemias is excelled by none has freely commented and interjected his own opinions while quoting those of others, thus greatly enriching the book. The complete bibliography will prove of inestimable value to all clinicians who are writing on the subject and will provide ready access to the world's literature on this most vital of maternal health problems.

WILLIAM BICKERS, M.D.

The Blood Bank and the Technique and Therapeutics of Transfusions. By ROBERT A. KILDUFFE, A.B., A.M., M.D., F.A.S.C.P., Director, Laboratories, Atlantic City Hospital; City Bacteriologist, Atlantic City; Serologist, Municipal Hospital for Contagious Diseases; Pathologist, Atlantic County Hospital for Tuberculous Diseases; etc. And MICHAEL DeBAKEY, B.S., M.D., M.S., F.A.C.S., Assistant Professor of Surgery, School of Medicine, Tulane University of Louisiana; Visiting Surgeon, Charity Hospital, Touro Infirmary, and Mercy Hospital, New Orleans; etc. St. Louis. The C. V. Mosby Company. 1942. 558 pages. With Two Hundred Fourteen Illustrations and One Color Plate. Cloth. Price $7.50.

The first in a young, though rapidly maturing field, this book touches upon every aspect of the transfusion of blood, plasma, and serum. It is based upon an almost exhaustive analysis of a voluminous literature.

A brief history of the early methods of transfusions serves as an introduction. Subsequently each subject is treated in great detail, reaching back to the simplest fundamentals. The authors discuss at length the indications and contra-indications to blood transfusion, emphasizing that the latter are

few indeed. Many pages are devoted to a discussion of the actual techniques of blood typing and compatibility tests, and to the various methods of blood transfusion. Great stress is placed upon the many sources of error in the matching and administration of blood; in fact, a whole chapter is given over to a consideration of the "Universal donor" and "Universal recipient", and their dangers. Essentially this is a book dealing with practicalities. The authors present several systems of blood banking, with some few comments on their relative values. They deal very completely with the preparation and usage of plasma preserved by various techniques. Remarkably little space however is devoted to discussion of the theoretical and physiological aspects of blood transfusion; some of the major points are touched briefly.

This work must necessarily be a compilation and summary of the literature, as the authors state in their preface. And so, in some instances they have taken over bodily large portions of several of the better articles. Much of the author's wide experience is also incorporated. That the book is timely is most obvious. However it is too diffuse for the general physician, not actually detailed enough for the specialist interested in blood banking and transfusion. Certainly it has special value for the student, insofar as fundamentals are grouped together. It is recommended to all who give blood and plasma transfusions.

ARTHUR KLEIN, M.D.

Psychosurgery. By WALTER FREEMAN, M.D., and JAMES WATTS, M.D., Washington D. C. Charles C. Thomas, Springfield, Illinois. 1942. 331 pages. Cloth. Price $6.00.

This book, "Psychosurgery," of Drs. Freeman and Watts, of Washington, D. C., is dedicated to Egos Moniz and includes certain psychometric and personality profile studies by Dr. Thelma Hunt of Washington.

The introduction of this important work on the treatment of mental disease by surgery traces this type of surgery from early operations for skull depression on to Egos Moniz of Lisbon, who in 1935 and 1936, reported the operation of lobectomy in twenty cases for the relief of mentally ill patients.

Freeman and Watts performed the first operation in this country, following Moniz' idea, on September 14, 1936. The operation has changed somewhat since in the hands of various operators and now lobotomy is usually preferred to lobectomy. Lyerly of Jacksonville, Florida, reported in a discussion in May 1939 the results in twenty-seven cases upon whom he had operated.

Preoperative, operative, and postoperative observation, examination, and analysis of the behavior patterns and reactions of many cases are reported in detail. These histories include electro-encephalographic tracings and studies of the patient's consciousness of self. The last chapters of the book are devoted to the consideration of the types of mental cases to which psychosurgery is applicable and a summation of results which are well justified in selected cases. Some may object, and I believe have objected, to the term psychosurgery, but it seems to this reviewer as rational as the use in medicine of such older and accepted terms as psychopathology, psychobiology, and psychosomatic medicine.

Freeman and Watts prefer lobotomy to lobectomy and feel that with lobotomy there is less loss of abilities than has been shown in some of the lobectomy cases.

As compared with the results of such newer treatments as insulin, metrazol, and electric shock, and drug-sleep treatments, no actual figures are available. Frontal lobotomy seems as a rule more effective in involution depression and in the older and more chronic anxiety states. It is fortunate that this report is made by two investigators, one a psychiatrist and one a neurosurgeon, for this is the combination which should be insisted upon. A great surgeon once said that the best surgeon was the one who knew when not to operate. This dictum applies especially to psychosurgery.

Freeman and Watts deserve great credit for their courage in introducing psychosurgery into this country, for their improvements in the operation, for the studies of their results, for their stimulation of others to take up this work, and for the publication of this frank, instructive, and interesting book.

"Psychosurgery" as a book is elaborately and excellently gotten up and profusely illustrated and deserves a place not only in every medical library but on the private bookshelf of every neurologist, psychiatrist, and neurosurgeon.

BEVERLY R. TUCKER, M.D.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

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VOL. 69. APRIL, 1942. No. 4

Editorials

The Other Side

PERHAPS some of the readers of the guest editorial written by Dr. J. Shelton Horsley and printed on the first page of this issue of the VIRGINIA MEDICAL MONTHLY will feel that there is another side to the question raised by our distinguished contributor. Oliver Wendell Holmes has so well expressed this other view in the *Professor at the Breakfast Table* that it may not be considered out of order to reproduce his words here:

"If you are making choice of a physician, be sure you get one, if possible, with a cheerful and serene countenance. A physician is not—at least ought not to be—an executioner; and a sentence of death on his face is as bad as a warrant for execution signed by the Governor. As a general rule, no man has a right to tell another by word or look that he is going to die. It may be necessary in some extreme cases; but as a rule, it is the last extreme of impertinence which one human being can offer to another. 'You have killed me,' said a patient once to a physician who had rashly told him he was incurable. He ought to have lived six months, but he was dead in six weeks. If we will only let Nature and the God of Nature alone, persons will commonly learn their condition as early as they ought to know it, and not be cheated out of their natural birthright of hope of recovery, which is intended to accompany sick people as long as life is comfortable, and is graciously replaced by the hope of heaven, or at least of rest, when life has become a burden which the bearer is ready to let fall."

The S. M. A.

WHEN the Southern Medical Association opens its annual meeting on November 9, 1942, in Richmond under the presidency of Dr. M. Pinson Neal, pathologist of Columbia, Missouri, and distinguished alumnus of the Medical College of Virginia, it will be gathering for the third time in its history in the capital of our State.

It has now been thirty-six years since Dr. G. C. Savage of Nashville, Tennessee, persuaded the Tri-State Medical Society of Georgia, Alabama and Tennessee to dis-

solve in the interest of a larger and more comprehensive, non-political and purely scientific society, devoted particularly to problems peculiar to the South and made up of physicians residing in all the sixteen Southern states and the District of Columbia. During these three and one-half decades the Southern Medical Association which resulted from this action has enjoyed phenomenal growth. From an initial membership of several hundred, its membership now numbers nearly eight thousand. From the three sections which constituted the organization at its first meeting, it has expanded to twenty-one sections. Next to the American Medical Association it is the largest medical society in the United States.

Its officers consist of a president, a president-elect, a vice-president, a secretary-manager, an editor and an associate editor. Three Virginians have held the presidency of the Association: Dr. Stuart McGuire in 1914, Dr. J. Shelton Horsley in 1927, and Dr. Fred M. Hodges in 1936. The Council of seventeen members is representative of each of the sixteen component states and the District of Columbia. Councillors from Virginia have been Drs. Stuart McGuire, J. Shelton Horsley, Ennion G. Williams, Hugh H. Trout, Lawrence T. Royster, Alfred L. Gray, R. Finley Gayle and Thomas W. Murrell. The Association functions also through an executive committee of three, selected from the Council, and through a Board of Trustees composed of the six most recent ex-presidents. The Woman's Auxiliary of the Association plays an important role in its organization.

The importance of the Southern Medical Association is increased by the fact that six other medical societies meet concurrently with it and bring to its gatherings many eminent specialists. The American Public Health Association, Southern Branch; the National Malaria Society; the American Society of Tropical Medicine; the American Academy of Pediatrics, Region 2, and the Women Physicians of the Southern Medical Association all meet at the same time and place as does the Southern Medical itself.

Although the Southern Medical Association was organized to avoid politics, disclaimed all legislative functions and had no direct affiliation with any state medical society or with the American Medical Association, and although it proposed to serve as a forum for young physicians of the South who had not attained the recognition necessary to assure their appearance on programs of national organizations, and although its intentions were to emphasize problems and subjects of discussion which have a Southern flavor, it soon found itself weilding great influence and attracting nationwide attention. Many papers were presented before it which were of more than regional interest. It is now generally recognized that some of the best scientific material in the field of medicine is reported before its meetings. To suggest its importance in the development of medical thought it is necessary to recall only the fact that Bliss and Long reported their experimental and clinical observations concerning Prontosil, Prontosil S and para amino benzene sulfonamide at the Baltimore meeting of the Association, November 17, 1936.

On Reading the Selective Service's Physical Rehabilitation Communication With Special Reference to the Fees Contained Therein

THE doctors of Virginia were recently circularized by the State Headquarters for the Selective Service in connection with the physical rehabilitation of registrants who have correctable defects and who, with proper treatment, may ultimately be inducted into the armed forces of the United States. This rehabilitation is, of course, a laudable undertaking and one in which the physicians of the State will heartily cooperate.

As serious as the situation is we cannot help sensing the ripple of unprofessional amusement that has broken over the profession on perusal of the fees mentioned and

the services for which they will be paid. It has been suggested that the line of otologists should form on the right and not push so, since it has been stated that Uncle Sam will pay $5.00 for the removal of wax from one of his nephew's ears, or $10.00 for removing same from two of the same nephew's ears. Perhaps from now on in the family of *Inspissated Cerumen* there will be an epidemic of twins. It is thought that the skin man, no longer pleasantly occupied with clearing My Lady's complexion because she now finds cosmetics too dear for experiment, and for the duration has returned to good old soap and water over her malar bones, will be glad to occupy himself less glamorously and less happily with freeing the more uncouth male patient of pediculosis for $20.00, but will wonder why he will get only $10.00 for ridding a companion registrant of scabies. The allergist who has been busy desensitizing his farmer patients to concrete sidewalks and his city dwellers to alfalfa will awake with a cry of pain to find his pets, the allergic dermatoses, classified with the "mild and infrequent" affections of the skin. He will want to be induced to "moderate hay fever" and will wonder why he is given from one to two months to cure it, at from $25.00 to $50.00. If this term signifies seasonal hay fever he is a little anxious as to who is to supply the extracts and what his patient will do next year when his sneezles and wheezles catch him in a carefully camouflaged fox hole opposite some Jap. And all the medical fraternity will ask in chorus why "deficient chest expansion" falls in the domain of medicine rather than in the field of calisthenics set up by some fair haired boy, and how the fee of $25.00 for its correction was arrived at. Most of the graying gentlemen who follow in Aesculapius's train would pay much more to achieve a shift of protuberance from their nether to their upper regions.

But never mind our snickers, Uncle Sam. We are all yours, yours to command. If you pay us too much we will hasten to buy Victory Bonds, and that will be pretty patriotic of us, for the Ides of March is not long past and that was a bad day for some of us. And if you don't pay us enough, we can't kick. We've heard Hitler doesn't pay anybody anything in Germany.

Neuroanatomy

By Fred A. Mettler, A.M., M.D., Ph.D., (St. Louis, The C. V. Mosby Company, 1942) from the Department of Neurology of the College of Physicians and Surgeons, New York City, has just appeared. It naturally calls to mind other works on the nervous system that have come out of this department: M. Allen Starr's text of the early 1900's, Frederick Tilney's great work on the brain and Wechsler's *Clinical Neurology*. The monograph before us is a well printed and well illustrated text prepared primarily for medical students. It gives, therefore, only such information as the author believes necessary for the student's needs, but it is sufficiently comprehensive to be a distinctly useful addition to the average physician's library.

Medical Legislation Considered by the Last General Assembly of Virginia

THE General Assembly of Virginia, when it adjourned a few days ago in Richmond, left a record none too friendly toward the medical profession. The story is best told in the bills themselves. Every doctor should read them and note their fate in the hands of our representatives.

SENATE JOINT RESOLUTION NO. 22

Directing the Virginia Advisory Legislative Council to make a study and report on the advisability of abolishing the office of coroner and transferring the duties of the office to medical examiners and law enforcement officers.

Whereas, there is an increasing dissatisfaction with the laws of Virginia under which medical examinations in cases of death under questionable or suspicious circumstances are made under the direction of coroners who have had little if any training and experience in pathology and toxicology, and who have no adequate laboratory equipment to ascertain the causes of such deaths; and

Whereas, in many States the scientific determination of the causes of such deaths, and the medico-legal questions which arise in such cases, are handled by a chief medical examiner with central laboratory facilities, and by regional or district examiners who are either located in cities or towns where adequate laboratories are available or are furnished with traveling laboratory units for use in emergencies, but there may be doubt as to the effectiveness of such a system in a State that is largely rural; and

Whereas, the importance of this matter warrants a careful study before any drastic change is made in its present system; now therefore, be it

Resolved by the Senate of Virginia, the House of Delegates concurring, as follows:

Section 1. The Virginia Advisory Legislative Council is hereby authorized and directed to make a thorough investigation and study of the present system under which coroners are charged with duties relating to the enforcement of the criminal statutes and with other duties which require scientific training and laboratory facilities, and to report on the advisability of abolishing the office of coroner, and transferring to persons trained in pathology and toxicology all questions with respect to the scientific determination of the cause of deaths under suspicious circumstances, and to regularly constituted law enforcement officers all matters relating to the enforcement of the criminal statutes. In making its study the Commission shall survey the laws and practices of other States and such other matters as it may deem requisite to enable it to formulate sound and adequate proposals for improvement in the existing plan, or for the substitution of a new and different system. In its investigation it shall avail itself of the assistance of the State Health Commissioner, and of any committee which may be appointed by the Medical Society of Virginia for such purpose.

Section 3. The Council shall submit to the Governor and the General Assembly at least thirty days prior to the next regular session of the General Assembly a report of its findings and recommendations, together with any suggested legislation necessary to carry such recommendations into effect.

Comment:

Senate Joint Resolution No. 22, directing the Virginia Advisory Legislative Council to make a study and report on the advisability of abolishing the office of coroner and transferring the duties of the office to medical examiners and law enforcement officers, was prepared by counsel for the Society, and presented to the Senate by Dr. W. C. Caudill, of Pearisburg, who represents the 19th Senatorial District. This resolution was finally adopted by the General Assembly. Under its provisions the Legislative Advisory Council is directed to avail itself of the assistance of any committee which may be appointed by the Medical Society of Virginia for the purpose, and such a committee will doubtless be appointed at an early date.

HOUSE JOINT RESOLUTION NO. 22

To provide a commission for a study of matters pertaining to the right to practice the healing art in Virginia.

Resolved by the House of Delegates, the Senate concurring, That there be, and hereby is, created a commission to be composed of seven members, two to be appointed by the President of the Senate from the members of the Senate, three by the Speaker of the House of Delegates from the members of the House, and two by the Governor. It shall be the duty of the commission to make inquiry into and investigation of a comprehensive plan for examining and licensing all persons seeking to practice any branch of the healing art in this State, and for effective means of preventing unqualified persons from practicing any branch of the healing art in the State.

The commission shall make a report of its findings, together with such recommendations as are deemed proper to make, to the General Assembly, at least sixty days before the convening of the next regular session of the General Assembly.

The members of the commission, other than State employees, shall receive five dollars per day for their services, together with their actual expenses; and State employees, should there be such, shall receive their actual expenses incurred in the performance of their duties hereunder; for the payment of which, and for such clerical or other assistance as they may deem necessary or proper to be employed, there is hereby appropriated a sum sufficient, not to exceed two thousand dollars, to be paid out of the contingent fund of the General Assembly.

Comment:

This resolution was adopted by the General Assembly by an almost unanimous vote, the size of the vote indicating the interest of that body in a plan whereby some order may be brought out of present chaotic conditions.

The members of the Commission will doubtless be appointed in the near future. The Medical Society of Virginia should be ready at all times to render every possible assistance to the commission, and to co-operate with it in formulating such changes as may be necessary in the present Medical Practice Act. It might be wise if a special committee of the Medical Society of Virginia was appointed to advise with the legislative committee and strengthen its hand when it is called before the Commission for expressions of opinion.

SENATE BILL NO. 110

To amend and re-enact Section 1616 *of the Code of Virginia, as heretofore amended, relating to the compensation and expenses of the State Board of Medical Examiners.*

Be it enacted by the General Assembly of Virginia, That section sixteen hundred and sixteen of the Code of Virginia, as heretofore amended, be amended and re-enacted, as follows:

Section 1616. Disposition of Funds; Compensation and Expenses of Board; How Paid.—The funds realized from all fees collected by the board shall be accounted for and shall be paid into the State Treasury. Each member of the board, except the secretary, shall receive ten dollars for each day actually employed in the discharge of his official duties, together with all necessary expenses incurred. The secretary of the board shall receive, in addition to necessary expenses, an annual salary, to be fixed by the board, not exceeding fifteen hundred dollars. The compensation and expenses of the members, and the necessary expenses of the board shall be paid out of the State treasury, on a requisition signed by the president and secretary of the board, and upon the warrant of the comptroller.

Comment:

Passed by both houses and signed by the Governor.

SENATE BILL NO. 189

To amend the Code of Virginia by adding a new section numbered 1615-*a, authorizing the State Board of Medical Examiners to admit to examinations given by such board, applicants otherwise qualified who have completed the prescribed courses in not less than thirty-two months.*

Be it enacted by the General Assembly of Virginia, That the Code of Virginia be amended by adding a new section numbered sixteen hundred and fifteen-a, as follows:

Section 1615-a. On and after the effective date of this act, the State Board of Medical Examiners shall admit to the examination prescribed by section sixteen hundred and fifteen of the Code of Virginia, all applicants otherwise qualified who have completed in not less than thirty-two months the four courses of at least eight months each required by subsection (d) of section sixteen hundred and fifteen of the Code of Virginia.

Comment:

Passed by both houses and signed by the Governor.

HOUSE BILL NO. 51

To amend the Code of Virginia by adding a new section, numbered 1622-a, prohibiting the practice of medicine in any of its branches in the State of Virginia, with certain exceptions, without a valid unrevoked and duly recorded certificate or license authorizing such practice issued by the State Board of Medical Examiners.

Be it enacted by the General Assembly of Virginia, That the Code of Virginia be amended by adding a new section, numbered sixteen hundred and twenty-two-a, as follows:

Section 1622-a. Except as otherwise provided in section sixteen hundred and eighteen of this chapter, no person shall practice medicine in any of its branches in the State of Virginia without a valid, unrevoked certificate or license authorizing such practice issued by the State Board of Medical Examiners and duly recorded as required by section sixteen hundred and twelve of this chapter.

Comment:

House Bill. No. 51 was introduced in the House of Delegates by Mr. Preston Collins at the request of the Committee on Legislation, and was referred to the Committee on General Laws of the House. Before the bill was acted upon by the Committee, Mr. Collins, at the request of the Attorney General, introduced House Bill No. 166 which had the same general purpose, namely, to insert in the Medical Practice Act express language making unlicensed practice unlawful. The committee, at the request of counsel for the Society, amended House Bill No. 166 to conform to the provisions of House Bill No. 51, and then rejected the latter and reported the amended bill favorably, placing it on the calendar of the House for consideration by the whole body.

HOUSE BILL NO. 166

To amend the Code of Virginia by adding a new section thereto numbered section 1612-a prohibiting as unlawful the practice of medicine in Virginia without obtaining from the Board of Medical Examiners for the State of Virginia the certificate provided for by chapter 68 of the Code of Virginia, and presenting same for registration and recordation to the clerk of the court as required by said chapter.

Be it enacted by the General Assembly of Virginia, That it shall be unlawful for any person to engage in the practice of medicine in Virginia, as defined in section sixteen hundred and twenty-two of the Code of Virginia, without first having obtained from the Board of Medical Examiners of the State of Virginia the license or certificate provided for by chapter sixty-eight of the Code of Virginia, and without first having presented said license or certificate to the clerk of the court for registration and recordation as provided in section sixteen hundred and twelve of the Code of Virginia. Any persons violating this section shall be punished as provided in section sixteen hundred and twenty-three of the Code of Virginia.

An emergency existing this act shall be in force from its passage.

Comment:

House Bill No. 166, which passed the House of Delegates by a vote of 59 to 30 after a number of undesirable amendments had been defeated by a very close margin, was then referred to the General Laws Committee of the Senate. On the advice of supporters of the bill in the House it was deemed wise for the Medical Society not to participate in the public hearing, leaving the bill to be presented by its patron, Mr. L. Preston Collins, as a necessary addition to the existing law

prepared and recommended by the Attorney General. Mr. Collins made a splendid presentation of the matter, but the opposition appeared in great force, backed up by letters, petitions, and telegrams, with the result that the Committee, with the exception of one man, voted to pass the bill by indefinitely. In the usual course this would have ended the fight, but through the intervention of the Governor a further hearing was had, after which the Committee voted 6 to 5 to report the bill favorably. However, Senator H. B. Mosely of Brunswick County, Chairman of the Committee, declined to report the bill to the Senate for consideration, and under an unwritten law of the Senate that body could not discharge the Committee and place the bill on the calendar for consideration without the consent of the Committee Chairman. The unfortunate result was that the opposition of one Senator prevented the possible passage of the bill by the Senate upon which it would have become law. However, it should be added that the Senate as a whole was far from feeling in complete accord with the position of the Medical Society, and it was a great relief to a number of Senators not to go on record on the passage of this bill. Under different circumstances it is probable that the action of one man could not have prevented a consideration of the bill on the floor of the Senate.

HOUSE BILL NO. 52

To amend the Code of Virginia by adding a new section, numbered 1623-a, authorizing the use of injunctions to prevent the practice of medicine in any of its branches in the State of Virginia without a valid, unrevoked and duly recorded certificate or license authorizing such practice issued by the State Board of Medical Examiners, and prescribing jurisdiction and procedure.

Be it enacted by the General Assembly of Virginia, That the Code of Virginia be amended by adding a new section, numbered sixteen hundred and twenty-three-a, as follows:

Section 1623a. The courts of record of the Commonwealth having chancery jurisdiction are hereby vested with jurisdiction and power to grant injunctions to enjoin and restrain any person from practicing medicine in any of its branches in the State of Virginia without a valid, unrevoked certificate or license authorizing such practice issued by the State Board of Medical Examiners and duly recorded as required by section sixteen hundred and twelve of this chapter.

A suit for the purpose of obtaining such an injunction may be brought by the State Board of Medical Examiners, by any member of the said Board, by the attorney for the Commonwealth for the county or city in which the suit is instituted, or by one or more duly licensed practitioners of medicine in any of its branches on behalf of himself or themselves and others similarly situated. Jurisdiction and procedure shall be the same as in other injunction suits except that it shall not be necessary to allege or prove that any person has been or is being injured by the unauthorized practice complained of, or that the remedy at law is inadequate. No injunction shall be awarded under this section until a hearing has been had upon the merits, and no bond shall be required as a condition to the going into effect of any injunction so awarded. The remedy by injunction hereby given is in addition to and not in lieu of criminal prosecution and punishment provided for by other sections of this chapter.

Comment:

House Bill No. 52 attached was prepared by counsel for the Society and was introduced in the House of Delegates by Mr. Preston Collins at the request of the Committee on Legislation. It was referred to the Committee on General Laws of the House, and unfortunately but by reason of matters beyond the control of its sponsors, was set for a public hearing along with a bill setting up a chiropractic board to license chiropractors now practicing in Virginia. The hearing brought forth nearly

every chiropractor, naturopath, and physiotherapist in Virginia, as well as members of many other cults. At the same time the Committee members were deluged with letters and petitions urging that the bill (permitting the use of injunctions to restrain unlicensed practice) be killed. The Committee on Legislation made a splendid fight for this bill, both prior to the meeting of the General Assembly and during the session, and had a number of prominent physicians at the hearing to present its views. Its efforts were unsuccessful, however, and the bill was killed by the Committee on General Laws. Fortunately, the chiropractors' bill, the most vicious one introduced up to this time, was likewise killed in the same Committee.

HOUSE BILL NO. 195*

Providing for the creation, establishment and appointment of a Board of Chiropractic Examiners, and defining its powers and duties; defining chiropractic; regulating the practice of chiropractic; providing for the issuance and revocation of certificates to chiropractors within the Commonwealth of Virginia; appropriating funds for purposes of this act; providing penalties for violations of this act; and repealing all acts or parts of acts inconsistent or in conflict herewith.

Be it enacted by the General Assembly of Virginia, as follows:

Section 1. Requiring a certificate.—It shall hereafter be unlawful for any person to practice chiropractic in this Commonwealth unless said person shall first obtain a certificate to practice chiropractic pursuant to the provisions of this act.

Section 2. Definition of chiropractic.—Chiropractic is hereby defined to be the adjustment of the twenty-four movable vertebrae of the spinal column and other articulations, and assisting nature, for the purpose of facilitating the transmission of nerve energy. The licensee may use such methods as taught by chiropractic schools and colleges to further assist nature in establishing the normal transmission of nerve energy. It shall not include the use of operative surgery, obstetrics, osteopathy, nor the administration or prescribing of any drug or medicine. A certificate to practice chiropractic granted by the said Board of Examiners hereinafter created shall confer upon the licensee the right to practice chiropractic, to use such other sanitary and hygienic measures as may be incident to such practice, and to use the title "Doctor" or "Dr." in connection with his name when accompanied by the word "chiropractor" or the letters "D.C." in connection with his name, provided, however, that failure to renew the certificate within ninety (90) days after the first day of July of each year as hereinafter provided shall automatically suspend the right of any holder thereof to practice chiropractic, and failure to renew the certificate three (3) years shall operate as revocation of the right to such certificate.

Section 3. Board.—The Board shall be composed of three (3) persons of integrity and learning in chiropractic and duly certificated, and who shall have been practicing chiropractic in the Commonwealth of Virginia for a period of at least three (3) years next prior to their appointment as members of the Board.

Section 4. Board; how and when appointed.—The Governor within thirty (30) days after the date upon which this act takes effect, shall appoint three (3) chiropractors who shall each possess the qualifications specified in this act to constitute members of the Board. (The bill continues in an elaborate way to further define the powers and authority of the Board. It is not thought worth while to reproduce more of the text.)

Comment:

As usual the chiropractors offered an elaborate bill setting up a chiropractic examining board to examine and license chiropractors, under which bill all persons who could certify that they have been practicing chiropractic in Virginia for two years prior to the effective date of the act would be licensed without any examination.

*We include this bill in order that the medical profession of Virginia may learn just what chiropractic is and what it is after.

The bill was introduced in the House of Delegates by Messrs. Thomas M. Calhoun of Grayson County, George M. Warren of Bristol, and Albert O. Boschen of Richmond, and was referred to the Committee on General Laws of the House. At a public hearing had on this bill a large number of unlicensed chiropractors appeared, stating that they were authorized to speak for about ninety others who are practicing in Virginia without a license. Many letters, telegrams, and petitions urging the approval of the bill were filed with the Committee, and a good deal of support was obtained among the members. However, after full consideration, the bill was killed in the Committee.

Department of Clinical and Medical Education of the Medical Society of Virginia

Industrial Medicine.

In cooperation with the Committee on Industrial Health of the Medical Socitey of Virginia, the Department of Clinical and Medical Education will be glad to assist component societies in offering post-graduate programs dealing with various phases of Industrial Medicine, Civilian Defense, and Military Medicine. The following is a list of proposed subjects for which speakers may now be obtained:

1. A Medical Program for small Industries.
2. Job Placement of the Worker.
3. The State Health Department's Program in Industrial Hygiene.
4. Industrial Dermatoses.
5. Handling of Eye Injuries.
6. Supervision and Treatment of Cardiovascular Condition in Industry.
7. Modern Burn Treatment.
8. Syphilis in Industry and the Control.
9. Traumatic Wounds—Infectious.
10. Low Back Sprains—Industrial Back Cases.
11. Circulatory Failure Associated with Trauma—Shock.
12. Reductions of Fractures and Dislocations.
13. Fractures and Injuries to the Hand and Wrist.
14. The Physician's Place in Industry.
15. Medical Control of Industrial Exposure to Toxic Chemicals. Dr. John H. Foulger, Wilmington, Delaware.
16. Pheumoconiosis.

Dr. Fred J. Wampler, Chairman of the Committee on Industrial Health, states that his Committee will assist in getting the best possible speakers for each program. The speakers will be obtained from the two medical schools in Virginia and from the field within Virginia and nearby states.

Any component society wishing to prepare a program should select the topics it wishes discussed and request the Executive Secretary of the Department of Clinical and Medical Education to arrange for speakers. It is hoped that each society will include topic Number 3 on its program in order to become familiar with services in Industrial Medicine which the State Department of Health offers. This topic can be covered in about ten minutes. Thus, it is possible to have two or three speakers on an afternoon or evening program.

Topics 7, 11 and 13 are applicable to Civilian Defense and Military Medicine as well as Industrial Medicine, while Number 15 includes Aviation Medicine.

The Clinch Valley Medical Society has arranged for a program on Industrial Health to be held at Norton on May 2nd. Programs for other societies can be arranged for the spring or summer months. The Executive Secretary will be glad to furnish further information about these programs and to assist component societies in organizing programs.

GEORGE B. ZEHMER,
Executive Secretary.

Societies

The Dickenson-Buchanan County Medical Society

Met at Grundy on February 18th under the presidency of Dr. J. C. Trivett of Page. After a dinner served at the hospital, the session was taken over principally for business discussions and the subject of purchasing Government Bonds and Stamps. Dr. P. J. Bundy gave a talk on What the Health Department of Buchanan is Doing in the Way of Defense Set-Up.

At this meeting, Dr. George B. Panters of Richlands, Dr. Hal S. Johnson of Patterson, and Dr. Thornton Kell of Grundy were elected to membership.

T. C. SUTHERLAND, *Secretary.*

The Fourth District and Southside Medical Society.

Held its regular meeting in Drewryville on March 10th under the presidency of Dr. J. B. Kiser of Emporia.

The program was as follows: The Medical Profession in Relation to the Present National Emergency by Dr. Leroy Smith, Franklin; Reflex Anuria with Case Report by Drs. H. C. Jones, Petersburg, and W. M. Phipps, Hopewell; The Treatment of Nasal Sinus Disease by Dr. Morgan B. Raiford, Franklin, with discussion by Dr. Pete N. Pastore, Richmond; Diffuse Lipomatosis by Dr. C. I. Pirkle, Petersburg; Adiposis Dolorosa by Dr. Edith I. Miller, Petersburg; and New Developments in the Management of Acute Appendicitis by Dr. Herbert Lee, Richmond.

Following this a subscription dinner was held in the Home Economics Building of the High School.

At the business session, it was voted to suspend the by-laws so that the Society might hold its next meeting at the Federal Reformatory, about five miles out of Petersburg on the Hopewell road. New members elected were Dr. Morris Binder of the Federal Reformatory Medical Department, Petersburg, and Dr. Paul Camp, Richmond.

F. N. TAYLOR, *Recording Secretary.*

Section of History of Medicine, Richmond Academy of Medicine.

The annual dinner meeting of this Section was held on March 10th, under the chairmanship of Dr. M. P. Rucker. The following program was presented: The Doctor Looks at Falstaff by Dr. Walter E. Vest, Huntington, W. Va., and Medicine in the Poems of Chaucer by Dr. George W. Corner, Baltimore.

Dr. W. Lowndes Peple was elected chairman; Dr. H. J. Warthen, vice-chairman; and Dr. Charles L. Outland, secretary-treasurer.

Roanoke Academy of Medicine.

At the regular meeting on March 2nd, the following program was presented: Lesions of Intervertebral Disc by Dr. Gayle Crutchfield, University; Surgical Shock and Blood Substitutes by Dr. Edwin P. Lehman, University; and Some Recent Studies on Cancer by Dr. J. Shelton Horsley, Richmond.

Dr. M. H. Williams is president of the Academy and Dr. H. B. Stone, Jr., secretary-treasurer.

Rockingham County Medical Society.

Officers of this society elected at its last annual meeting are: President, Dr. N. M. Canter, Harrisonburg; vice-president, Dr. Ernest Miller, Elkton; and secretary-treasurer, Dr. Thomas Scarlett, Harrisonburg. This society meets quarterly, on the second Monday night in February, May, August and November.

Roanoke—Convention City

Medical Society of Virginia

October 5, 6, and 7, 1942

October is one of the most delightful months of the year in which to visit Roanoke, the Medical Center of Southwest Virginia. There is "Magic" in the Blue Ridge Mountains that produces achievement, happiness, rest and contentment.

In 1825 Roanoke, then called Gainsboro, consisted of two frame buildings. Later, having grown into a village with two churches, several stores and a blacksmith shop, the name was changed to Old Lick. Another town, under the name of Big Lick, was promoted at this site in 1834, and in 1880 the Federal Census gave Big Lick a population of 669. In 1882 the Shenandoah Valley Railroad connected with the Norfolk and Western at Big Lick, and the name of the town was changed to Roanoke; from then until the present time the city has indeed been magic in its growth. In 1882, and every year since, the Norfolk and Western Railway Company, with its own remarkable growth, has provided a great stimulus to the growth and prosperity of the city of Roanoke.

Roanoke now boasts 170 industries and 11 utility companies, with an approximate net payroll of $29,350,175.66. Roanoke has 1,128 hotel rooms, 850 of which are in three magnificent hostelries. Here are located 109 churches, 19 parks and 11 playgrounds. There are 6 local hospitals, also a large U. S. Veterans Facility. Within the metropolitan district are Roanoke College and Hollins College. Numerous fine residences enhance the beauty of the city and its suburbs.

Roanoke has two great trunk line railroads, the Norfolk and Western and the Virginian, with 93 (average) freight trains and 42 passenger trains daily in and out of the city. American Airliner planes make daily stops, northbound and southbound, at Woodrum Field, four and a half miles from the center of the city. This airport has an acreage of 352.31 acres.

The metropolitan population (1940 census) is 110,593, and the trade territory of 15,530 square miles has a population of 1,159,171.

Roanoke, with an elevation of 1000 feet above sea level, has an enviable climate, and makes an ideal headquarters from which to visit innumerable natural wonders of unparalleled scenic beauty.

In the beautiful valley, nestled between the noble Blue Ridge and Alleghany Mountains, in which Roanoke is located, are three eighteen-hole golf courses, the Roanoke Country Club, and the Blue Hills and Monterey Golf Courses. These golf courses are maintained in excellent condition throughout the year. Non-resident guest cards may be secured through the hotels.

Time and space will not permit further narration of the attractions of this charming section of Virginia.

Make your plans to be with us in Roanoke and we will make our plans to welcome and entertain you. So come, you tired doctors, pursue your weary way to Roanoke, the "Magic City", and here get the recreation and pleasures that await you! You are always certain of a cordial welcome when you come to Roanoke!

This city of your 1942 meeting is the heart of a land of flourishing industries and of phenominal commercial and recreational potentialities. Roanoke is the center of a region which has done much to make Virginia truly "The Beckoning Land".

ROANOKE COMMITTEE OF ARRANGEMENTS

General Chairman—DR. W. L. POWELL
Entertainment—DR. A. M. GROSELOSE
Halls and Hotels—DR. GEORGE S. HURT
Commercial Exhibits—DR. F. A. FARMER
Scientific Exhibits—DR. W. W. S. BUTLER
Automobiles—DR. ALLEN BARKER
Publicity—DR. M. A. JOHNSON, JR.
Ladies—MRS. M. H. WILLIAMS

HOTELS

HOTEL PATRICK HENRY

250 rooms

ARTHUR B. MOODY, *Manager*

HOTEL PONCE DE LEON

200 rooms

GARLAND W. MILLER, *Manager*

HOTEL ROANOKE

325 rooms

KENNETH R. HYDE, *General Manager*
GEORGE L. DENISON, *Resident Manager*

RATES

HOTEL PATRICK HENRY:

Single rooms	$2.50-$3.00-$3.50-$4.00
Corners	$5.00
Twin bedded rooms	$5.00-$6.00-$7.00
Corners	$8.00

HOTEL PONCE DE LEON:

Single rooms	$2.00-$2.50-$3.00
Twin bedded rooms	$4.00-$5.00-$6.00

HOTEL ROANOKE:

Non-Air-conditioned single rooms	$2.50-$3.00-$3.50
Air-conditioned single rooms	$3.50-$4.00-$4.50
Corners	$5.00
Non-Air-conditioned twin bedded rooms	$5.00-$6.00
Air-conditioned twin bedded rooms	$6.00-$7.00
Corners	$8.00

The committee will be glad to assist those who may prefer accommodations in private homes.

News

The Virginia Society of Otolaryngology and Ophthalmology

Will hold its regular annual meeting in Staunton, on Saturday, May the 16th. Guest speakers at this time will be Dr. John M. McLean of New York and Dr. Francis E. Le Jeune of New Orleans. Dr. Mortimer H. Williams of Roanoke is president; Dr. Guy R. Fisher of Staunton, vice-president; and Dr. Meade Edmunds of Petersburg, secretary-treasurer.

Chicago Selected for 1942 Clinical Congress, American College of Surgeons.

Because of the war, the thirty-second annual Clinical Congress of the American College of Surgeons will be held in Chicago, October 19 to 23, instead of in Los Angeles as originally planned. Headquarters will be at the Stevens Hotel. The twenty-fifth annual Hospital Standardization Conference sponsored by the College will be held simultaneously. The programs of both meetings will be based chiefly on wartime activities as they affect surgeons and hospital personnel in military and civilian service.

News From University of Virginia, Department of Medicine.

Motion pictures from the Lederle Film Library were shown in the Amphitheatre of the University of Virginia Medical School on February 23rd. The

films shown were "Pernicious Anemia", "Pneumonia—Diagnosis and Treatment", and "Post-Encephalitic Parkinsonism".

On February 24th Dr. Gayle Crutchfield presented a paper at the meeting of the Tri-State Medical Association in Greenville, S. C. His subject was "Lesions of the Intervertebral Disc, with Particular Reference to their Atypical Manifestations". On March 2nd he spoke before the Roanoke Academy of Medicine on "Diagnosis and Treatment of Lesions of the Intervertebral Disc".

Dr. Edwin P. Lehman spoke before the Institute of the Virginia Cancer Foundation at its meeting in Roanoke, on March 2nd. His subject was "The Incurable Cancer Patient in Virginia".

The Virginia Urological Society held its annual meeting at the University of Virginia Hospital on Thursday, March 5th. The following members of the Hospital Staff presented papers before the meeting: Dr. Charles L. Prince, on the subject "Unusual Neoplasms of the Genito-Urinary Tract"; Dr. Edgar W. Kirby, Jr., on the subject "Results of Prostatic Resection on the Small Prostate"; Dr. Bruno Barelare, Jr., on the subject "Experimental Surgery of the Kidney: A New Method of Nephrotomy Closure"; Dr. Leon R. Culbertson, on the subject "Spontaneous Perinephric Hemorrhage"; Dr. Charles L. Prince, on the subject "Carcinoma of the Prostate"; Dr. Samuel A. Vest, on the subject "Transplantation of the Ureters". There was also a presentation of unusual cases by Dr. Vest and Staff. Dr. Linwood D. Keyser, President of the Society, spoke before the meeting on "Hormone Treatment of the Prostate", and Dr. William M. Coppridge, guest speaker, of Durham, N. C. addressed the Society.

On March 5th the Albemarle County Medical Society held its monthly meeting and dinner at the Farmington Country Club. Dr. William P. Herbst, of Washington, D. C., who was attending the Virginia Urological Society meeting, addressed the group.

Dr. E. P. Lehman addressed the Kanawha County Medical Society, which met in Charleston, West Virginia, on March 10th. His subject was "Surgical Shock and Blood Substitutes".

Medical College of Virginia News.

Dr. C. C. Coleman, professor of neurological surgery, conducted a symposium on War Wounds of the Skull at a meeting of the American College of Surgeons in Atlanta, Georgia, March 18, and one at Durham, North Carolina, on March 23.

Dr. I. A. Bigger, professor of surgery, spoke recently to the Berks County Medical Society at Reading, Pennsylvania, on Wounds of the Larger Peripheral Arteries.

Dr. Maxwell Berry, recently of the Mayo Clinic staff, has joined the faculty of the college as associate in medicine.

Dr. Harry Walker, associate professor of medicine, attended a symposium on chemical warfare at the Kettering Laboratories of the University of Cincinnati for a week's study last month.

Dr. J. B. Youmans, Dr. Virgil P. Sydenstricker, Dr. D. W. Richards, Dr. J. M. Carlisle, Dr. Gus Tucker, Dr. G. W. Korner, and Dr. Walter E. Vest were recent college visitors.

The college will begin its accelerated program for the session 1942-43 on July 6. Classes will be conducted on a quarter basis, each quarter of eleven weeks, with a two weeks' vacation period between quarters, graduating students in medicine, dentistry, and pharmacy in three years instead of four years.

Dr. Harvey B. Haag, professor of pharmacology, Dr. Paul S. Larson, research associate in pharmacology, Dr. Ernst Fischer, associate professor of physiology, Dr. J. H. Weatherby, research associate in pharmacology, and Dr. Clair R. Spealman, associate in physiology, will attend the annual meeting of the Federation of American Societies for Experimental Biology convening in Boston on April 1. Dr. Haag, Dr. Weatherby and Dr. Larson are taking part in the program.

Dr. Rolland J. Main, professor of physiology, repesented the college at a conference on nutrition, a part of a nation-wide program, at Hampton Institute on March 20-21.

Dr. Everett I. Evans, associate in surgery, led the panel discussion on the treatment of burns at the meeting of the American College of Surgeons in Jacksonville, Florida, on March 20, and one at Durham, North Carolina, on March 23.

Graduate Course in Industrial Hygiene and Medicine.

Realizing the importance of some special training for physicians who are going into the field of industrial medicine, the Medical College of Virginia, in cooperation with several industrial organizations, is offering practical intensive courses of one, two or three months' duration in industrial hygiene and medicine for physicians.

The tuition for this course will be $50.00 for the first month and $25.00 for each succeeding month. As no more than four students can be accommodated at a time, application for instruction should be made promptly to the dean of the school of medicine or the professor of preventive medicine, Medical College of Virginia, Richmond.

Dr. William B. Porter,

Professor of Medicine, Medical College of Virginia, Richmond, was the principal speaker at the recent annual initiation ceremonies of the Alpha Omega Alpha, honorary medical fraternity, at Tulane University, New Orleans, La. His subject was "The Heart Changes and Physiologic Adjustments in Chronic Anemia".

Dr. Lewis M. Allen,

Winchester, has been elected president of the Farmers and Merchants National Bank and Trust Company of that city, filling a vacancy caused by the death of John M. Steck.

Dr. Stuart McGuire,

Richmond, was again named honorary commander of the veterans' association, Base Hospital No. 45, known locally as McGuire Unit, at its annual meeting on February 28.

Married.

Miss Ann Page Walker of Hanover County and Dr. Edmund Moseley LaPrade, Richmond, February 28th. He is a graduate of the Medical College of Virginia in 1935.

Miss Elizabeth Grover, Lusby, Md., and Lieutenant Herbert Grayson Ruffin, M. C., Ft. Meade, Md., February 21st. Lieutenant Grayson is a graduate of the Medical College of Virginia in 1938 and was located at Arvonia before entering the service.

Miss Sarah Lotta Bagwell, Onancock, and Dr. Harry LeCato Smith, Jr., Charlottesville, March 7th. He received his medical degree from the University of Virginia in 1937.

Design for Emblem of American Psychiatric Association.

Dr. James K. Hall, Richmond, President, has announced a contest for the design of an emblem for the Association to be used in the centennial celebration in 1944. All artists, art teachers, and students are invited to compete for the prizes amounting to a total of $500. Three prizes of $100 each will be awarded for the three best drawings, and from these will be selected the one considered most suitable for the purpose. This one will receive an additional award of $200. The design may be executed in any medium; it should be rectangular and preferably vertical, and the size of the mat should be 11 by 14 inches. Drawings should be sent to the American Psychiatric Association, 9 Rockefeller Plaza, New York City, and should reach that office not later than April 15, 1942. Inquiries regarding the general ideas of the contest, etc., may be addressed to Dr. Gregory Zilboorg, 14 East 75th Street, New York City.

Personnel Notes, State Department of Health.

Dr. W. E. Roye, who was recently transferred to the Tuberculosis Out-Patient Service of the State Health Department, Richmond, from the Alleghany-Botetourt Health District, Covington, Virginia, has been called to active military duty as of March 22.

Dr. J. G. McNeil, formerly health officer of the Washington-Bristol Health District, Abingdon, Virginia, has been transferred to the Prince William-Stafford Health District to take the place of Dr. J. McIver Jackson who recently resigned to accept a position with the North Carolina State Health Department.

Dr. John A. Proffitt,

Recently at Piedmont Sanatorium, Burkeville, has moved to Louisville, Ky., where he has accepted the position as assistant medical director of the State Tuberculosis Sanatorium.

The American College of Physicians

Is to hold its twenty-sixth annual session in St. Paul, Minn., April 20-24, under the presidency of Dr. Roger Lee of Boston. The scientific sessions include papers on a variety of subjects, panel discussions, clinics and technical exhibits. All of these

will be in the municipal auditorium, headquarters for the meeting.

The Physicians' Hospital

Was opened in Warrenton on February the 13th, through the efforts of a number of doctors in Fauquier and surrounding counties. It is in the building formerly known as the Fauquier County Hospital and is completely equipped for the care of medical, surgical and obstetrical patients, with nursery facilities. Officers of the hospital for this year are: President, Dr. Richard Mason, The Plains; vice-presidents, Dr. Stewart McBryde, Manassas, and Drs. J. E. Knight and George H. Davis of Warrenton; and secretary-treasurer, Dr. William R. Pretlow of Warrenton. Dr. M. B. Hiden of Warrenton and Leesburg and Dr. J. Frank Folk of Warrenton are chairman and vice-chairman of the board, respectively. Other stockholders in addition to these are: Drs. W. G. Trow, Warrenton; W. O. Bailey, Leesburg; H. L. Townsend, Marshall; Wade C. Payne, Haymarket; and V. L. McCullers, Remington.

Dr. H. H. Ware, Jr.,

Richmond, was elected President of the Virginia Conference on Family Relations, at its meeting held on February 27th.

Dr. L. W. Hulley, Jr.,

Has located for practice at Palmyra. He is a graduate of the Department of Medicine, University of Virginia, in 1939, and was recently at New Brighton, Staten Island, N. Y.

Richmond City Epidemiologist.

Dr. Millard C. Hanson, City Health Commissioner, has announced the appointment of Dr. Paul W. Bowden as full time epidemologist for Richmond, his appointment having become effective March 1. Dr. Bowden came to Richmond from Charlotte County, where he had been health officer since completing his post-graduate work in public health at Johns Hopkins University early last year.

Dr. J. R. Chitwood,

Formerly of southwestern Virginia, is now located at McRoberts, Ky., where he is connected with the Consolidation Coal Company.

New Health Officer in Staunton.

After a service of several years, Dr. Charles W. Rodgers recently resigned as health officer of Staunton, and has been succeeded by Dr. Leland C. Brown of that city.

Dr. Walter J. Otis,

New Orleans, La., an alumnus of the Medical College of Virginia, class of '15, and also a member of the Medical Society of Virginia, was recently elected president of the New Orleans Scciety for Neurology and Psychiatry.

Dr. Lewis C. McNeer,

Who has practiced for sometime at Dante, announces that he is now located in Bristol, Tenn., with offices in Central Building. He is specializing in diagnosis and surgery.

Dr. C. M. Vaughan,

Located for several years at Harrisonburg, has moved to Paris, Ky., where he has offices in the National Bank Building.

Dr. John B. Bullard,

For sometime of Richmond, is now connected with the medical staff of Pilgrim State Hospital at West Brentwood, L. I., N. Y.

American Board of Obstetrics and Gynecology Examinations.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted at Atlantic City, N. J., by the entire Board, from Thursday, June 4, through Tuesday, June 9, 1942, prior to the opening of the annual meeting of the American Medical Association.

The Board requests that all prospective candidates who plan to submit applications in the near future request and use the new application form which has this year been inaugurated by the Board. The Secretary will be glad to furnish these forms upon request, together with information regarding Board requirements. Address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

Noted Scientist in Vitamin Fields on Borden Staff.

The Borden Vitamin Company, a division of the Borden Company, which has been bringing into its fold a number of research and production leaders in that field, announces that Dr. Hugh H. Darby, distingiushed Columbia scientist and author of many authoritative works, has joined its staff for research

and development in the production and application of vitamins and hormones.

Among other distinctions, Dr. Darby is noted as the discoverer of the existence of Vitamin D in plant life, and for his spectographic research on vitamins A, D and K. He originated the system, widely used by the Department of Agriculture, of heat treatment for the destruction of harmful insects.

Virginia State Conference of Social Work.

The program of the Medical and Health Section of the Virginia State Conference of Social work has been announced by the chairman, Dr. William Bickers, of Richmond. Members of the medical profession are invited to attend these sessions to be held at the Jefferson Hotel in Richmond on Friday and Saturday, April 24th and 25th.

PROGRAM

FRIDAY, APRIL 24TH

10:00 A.M. Dr. M. P. Rucker, "Case Reports on Maternal Deaths in Virginia".

11:00 A.M. Mr. Louis Reid, United States Public Health Service, "Medical Facilities in the Counties of Virginia".

2:00 P.M. Dr. E. T. Trice, "Physical Disabilities in the Selectees".

3:00 P.M. Mr. Watson B. Miller, from the office of Mr. Paul McNutt, "Federal Plan for Extending Health in Medical Services".

SATURDAY, APRIL 25TH

10:00 A.M. Mr. John H. Lewin, special assistant, Attorney General's Office, and Mr. Seth Richardson, Counsel for the A.M.A., will present the opposing sides of the issues involved in the recent trial of the United States versus the A.M.A., which revolved around the Group Health Association in Washington.

The Saturday morning program will be of the greatest interest to physicians because it will discuss a matter of vital concern to all. The two opposing counsels will debate the points made by each side during the trial in Washington.

Dr. Wilson E. Driver,

Norfolk, is on a visit to his son in Sao Paula, Brazil.

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Obituaries

Dr. Charles Wilson Doughtie,

Prominent physician of Norfolk, died March 5th, after an illness of several months. He was sixty-five years of age and graduated from the Medical College of Virginia in 1898. Dr. Doughtie was always interested in various projects for the advancement of his community and profession. He was health officer of Tanner's Creek district, a member of the Norfolk County Health Board, and also held many civic offices. He was a former president of the Norfolk County Medical Society and had been a member of the Medical Society of Virginia since 1899. His wife, two daughters, and a son survive him.

Dr. Charles McCullouch,

Lexington, died March 12th. He was sixty-nine years of age and a graduate of the George Washington University School of Medicine, Washington, in 1897. Dr. McCulloch had practiced at Howardsville in Albemarle County before his retirement, on account of ill health, when he moved to Lexington. He had been a member of the Medical Society of Virginia for forty-four years. His wife and two children survive him.

Dr. Moses Carlysle Sycle,

For many years a genito-urinary surgeon of Richmond, died suddenly of a heart attack at his home in this city, March the 24th. He was sixty-three years of age and a graduate of the former University College of Medicine in Richmond in 1903. During the first World War he saw service as a captain in the medical corps. His wife and several sisters survive him.

Dr. Wilbur Henson Hale,

Narrows, died of pneumonia on December 25, 1941. He was thirty-nine years of age and a graduate of the Medical College of Virginia in 1928. Dr. Hale was formerly a member of the Medical Society of Virginia.

Dr. Louise Taylor Jones,

McLean, died December 21, 1941. She was seventy-one years of age and a graduate of John Hopkins University School of Medicine in 1903.

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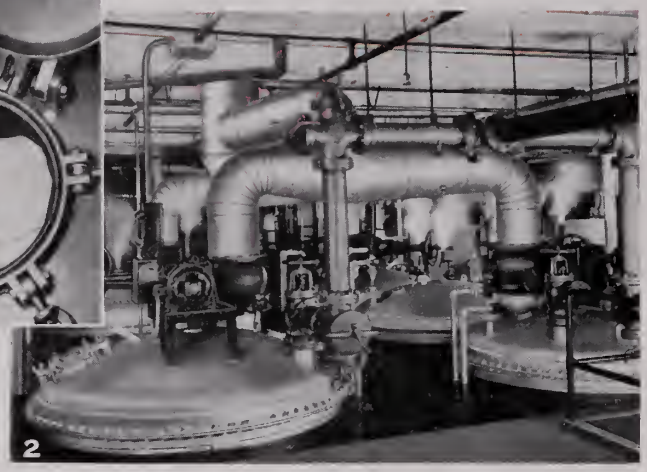

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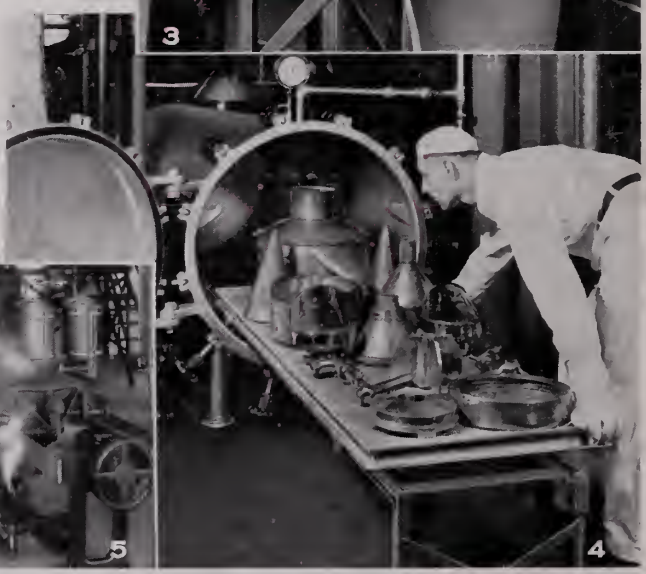

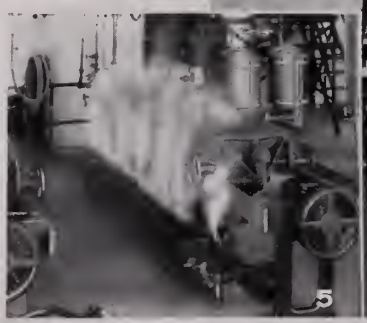

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VOL. 69. May, 1942 NO. 5.

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Annual Meeting—Medical Society of Virginia
Roanoke, October 5, 6 and 7, 1942

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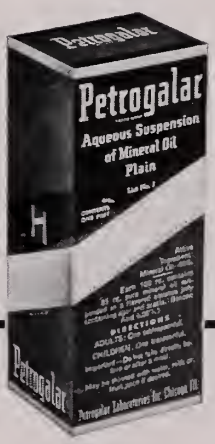

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Guest Editorial

The Mineral Oil Vitamin A Problem

IN 1927, two groups of workers, Burrows and Farr,[1] and Dutcher, Ely and Honeywell[2] found that rats fed an adequate laboratory diet which supplied vitamin A as butter fat grew poorly and eventually died when mineral oil was given to them. The deficiency which developed in the rats was typical of vitamin A deficiency. At this time, it was not known that carotene and vitamin A were separate substances and hence the later work of Moness and Christiansen[3] only confused the problem when they found that vitamin A deficiency did not appear in their rats when they ate the same diet and received the same amounts of mineral oil. However, they had changed the sources of vitamin A from butter fat to cod-liver oil.

When Moore[4] showed that Vitamin A and carotene were chemically different substances, it became apparent that mineral oil might have a selective effect on one and not the other. This assumption was proved by further animal experiments.[5]

The importance of this work led two of us to apply the facts learned from animal experiments to patients.[6] Several patients were placed on diets high in carotene and the blood carotene levels followed. It was found in all of these patients that the blood carotene levels would increase to several times their original level in the course of twelve to fourteen days on such diets. If mineral oil was then given these patients, the blood carotene levels would slowly fall and in most cases, would drop to the original levels in about a similar length of time. We tried to mimic the common human methods of taking mineral oil by having one group of patients take 20 cc. of oil before meals; a second group 20 cc. before the morning and night meals and a third group 20 cc. before retiring.

The first two groups of patients had a sharp fall in the blood carotene when mineral oil was taken, but the third group which took mineral oil only at night had little fall in the carotene levels during the ten days the experiment lasted.

It was our belief, at this time, that perhaps small amounts of mineral oil could be taken at night without robbing the ingested food of its carotene. This theory was later shown to be untrue.[7] Further experiments were done[8] to determine whether some of the more commonly used types of emulsified mineral oils would have the same effect as plain mineral oils. To our surprise, we found that even though such preparations have only 60 to 80 per cent mineral oil, their effect in removing carotene from ingested food was the same as in more concentrated mineral oils. We later fed mineral oil saturated with crystalline carotene at *room temperature* and found that this also robbed the body of food carotene. When we fed mineral oil saturated with crystalline carotene at *body temperature,* we found that this mixture did not remove the carotene from the food. The difference in the carotene saturation of mineral oil at room and body temperatures was only 0.02 per cent. This difference seemed at first glance to be too small to have any such profound effect. However, if one applies this small

differential in per cent to units of vitamin A, the results are surprising. At body temperature, two ounces of mineral oil (60 cc.) can absorb 280,000 international units of vitamin A as carotene. At room temperature two ounces of mineral oil (60 cc.) can absorb 240,000 international units of vitamin A as carotene. This difference of 40,000 units in the saturation of mineral oil with carotene at room and body temperatures is greater than the total number of vitamin A units in our high carotene diets. This small percentage difference in saturation of mineral oil with carotene at room and body temperatures then explains why the carotene mineral oil mixture was ineffective in protecting the food carotene unless the oil was saturated with carotene at body temperature. It likewise explains why even an ounce of mineral oil taken before retiring can pick up and hold all of the carotene of the food with which it comes in contact.

Inasmuch as mineral oil has an affinity for carotene but not vitamin A we thought it might be possible to make a mixture of mineral oil and cod-liver oil which would indirectly prevent the vitamin A deficiency of animals which develops when mineral oil and carotene are given. Such experiments were devised and it was found that the animals on this regimen could remove the vitamin A from the cod-liver oil mineral oil mixtures quantitatively.

Most of us obtain a large per cent of our vitamin A from the breakdown of carotene containing foods. The continuous use of mineral oil then would prevent us from absorbing this carotene and would slowly deplete our vitamin A stores and lead to a vitamin A deficiency unless some source of vitamin A other than carotene was supplied. If mineral oil is to be the cathartic of choice and is to be used for any period of time longer than a month, the carotene loss to the mineral oil can be compensated for by giving with it one or two teaspoofuls (4-8 cc.) of U.S.P. cod-liver oil or its equivalent in other preparations of fish liver oils. This is like borrowing from Peter to pay Paul, but nevertheless, it answers the problem of carotene loss to mineral oil.

ARTHUR C. CURTIS, M.D.,
University Hospital, Ann Harbor, Michigan.

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THE USE OF SULFANILAMIDE IN COMPOUND FRACTURES*

FRED F. DAVIS, M.D.,
Lewis-Gale Hospital,
Roanoke, Virginia.

Compound fractures have always been a major source of trouble to both patient and physician. Prior to twenty-five years ago good results were rarely obtained. The mortality was high and in the cases which recovered the limb was often lost or left badly crippled. The first real advance in treating these injuries was made during the first World War when the Dakin-Carrel method was instituted. This method recognized the importance of adequately caring for the soft tissue wound. The results were far more satisfactory than had been obtained by any previous form of treatment. However, the problem of caring for the fracture itself was in no way minimized. The Orr treatment, developed some years later, solved many of these problems. Briefly, this consists of cleansing, debridement, packing with petrolatum gauze and immobilization in a plaster cast. Although this method had some undesirable features, it proved to be reasonably satisfactory and was in rather general use in this country prior to the advent of the sulfonamide drugs.

Fig. I.—Case I. This is a post reduction X-ray showing the vitallium plate holding the fragments in good position and alignment.

*Read before the Roanoke Academy of Medicine at its meeting on February 2, 1942.

With the coming of these unbelievably effective drugs it was inevitable that there should be a change in the treatment of compound fractures. However, the development of vitallium metal by Doctors Venable and Stuck, of San Antonio, Texas, played no small part in bringing about the present concept of the management of these injuries. This metal causes little or no tissue reaction, and so enables us to secure and maintain perfect apposition and immobilization in this troublesome group of fractures. It is rarely necessary or advisable to remove appliances made of vitallium. Even in the presence of infection they show little tendency to act as foreign bodies.

Fig. II.—Case II. This X-ray was taken after union was partly complete. It shows a satisfactory reduction maintained without internal fixation.

The exact mode of action of the sulfonamide drugs is not known, although much experimental and clinical work has been done. It has been shown that even in low concentration they exert a bacteriostatic effect. When used locally in wounds the concentration at the site of the potential infection is many times greater than can be secured by oral adminis-

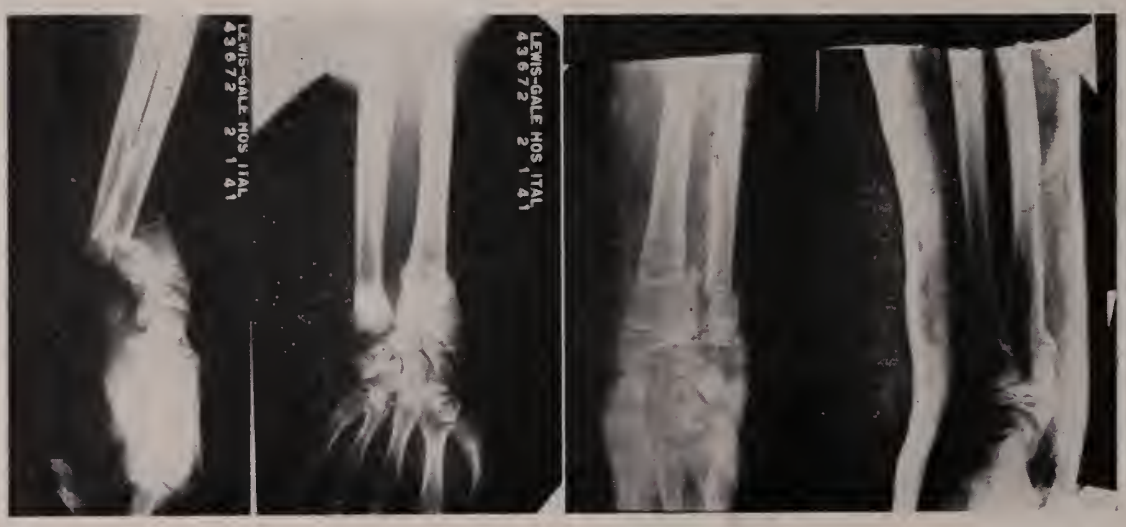
tration. As shown experimentally by Key and Burford wound healing is not retarded. Clinical experience bears out this finding. Relatively large quantities can be used without systemic reaction. We have used as much as one ounce in a wound with no untoward symptoms. Theoretically, it would seem that sulfathiazole should be more effective when used locally. However, as shown experimentally by Hawking, the local concentration in the wound is less and the penetration into the tissue is less than it is with sulfanilamide. Also it is more expensive. Sulfathiazole does have a greater bacteriostatic activity against the staphylococcus and it persists for a longer period in the wound. In this series of cases only sulfanilamide has been used. It is our feeling that one of the sulfonamide drugs should also be given orally when infection is especially feared. In these grossly contaminated compound fractures liberal quantities of the powder should be dusted into the wound and spread gently over each layer of tissue. Spraying sulfanilamide on is probably sufficient in clean operative wounds.

It is unnecessary and probably inadvisable to autoclave the powder. The chemical changes brought about by autoclaving are not accurately known. Also it has been found that the autoclaved powder sometimes forms a stone-like deposit in the wound which interferes with healing.

Recent changes in the treatment of compound fractures have in no way minimized the importance of fundamental principles. The first consideration is always the patient as a whole. Shock and pain must be combated. Then a plan of treatment is devised to suit the individual patient. Some of the factors influencing the decision as to treatment are the general condition of the patient, the extent of soft tissue injury, the type and location of the fracture, and the length of time that has elapsed since injury. As soon as the patient's general condition permits, the wound should be thoroughly cleansed with surgical soap and large quantities of warm saline solution. Debridement should be thorough and all foreign bodies carefully searched for and removed. No tissue should be sacrificed except that which is definitely devitalized.

On December 1, 1939, we started using powdered sulfanilamide in all fresh wounds. Although drains were rarely used the wounds healed without evidence of infection. We then felt that in all probability fewer complications would develop in compound fractures if they also were closed without drains. This proved to be true. During the past twelve months, from November 1, 1940, to November 1, 1941, we have treated thirty compound fractures by implantation of sulfanilamide powder and primary closure of the wounds.

Injured nerves and tendons are repaired if the patient's condition permits. Otherwise, a secondary repair is done later. No other sutures are used except in the skin. The edges of the skin wound are approximated without the use of drains. If an accurate reduction cannot be maintained otherwise,



Figs. III and IV.—Case III Films made before and after reduction. Fairly satisfactory reduction maintained without internal fixation.

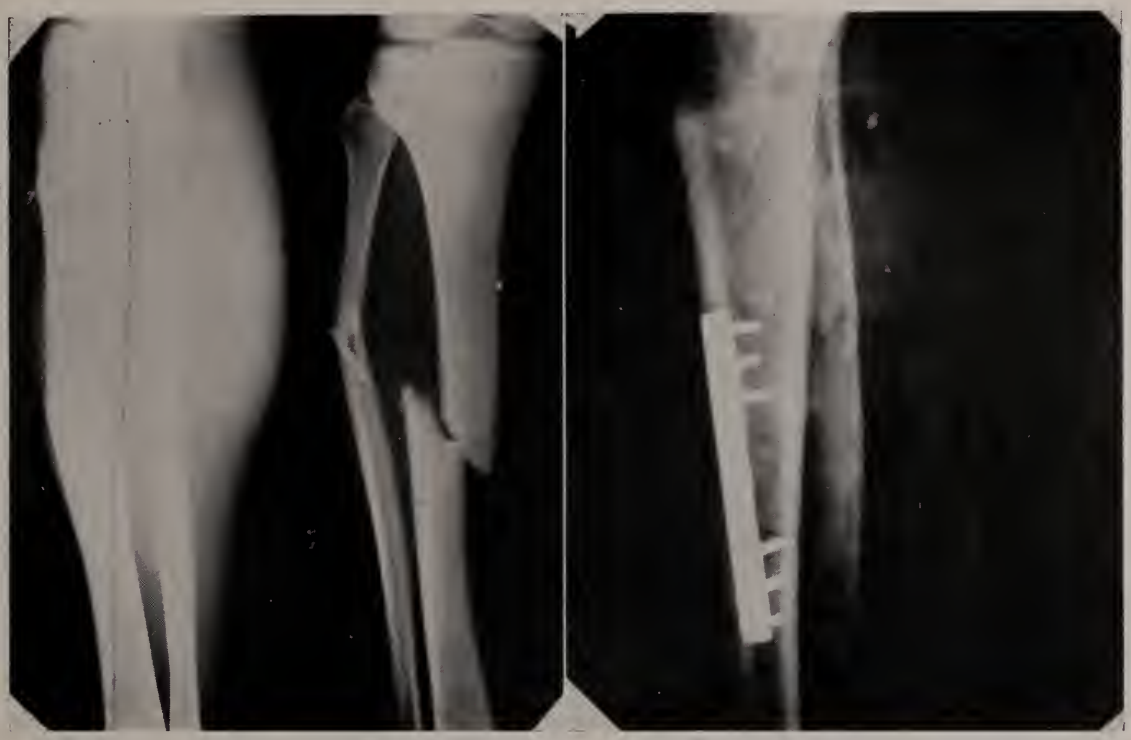
we do not hestitate to use internal fixation. Appliances made of vitallium are preferred whenever possible.

The wounds in twenty-eight out of the thirty compound fractures have healed by primary intention. In two cases local infection developed. There was no systemic evidence of infection in either of these cases. In one case infection was confined to the soft tissues and in the other a localized osteomyelitis developed. This gives an incidence of infection of 6.6 per cent. Jackson reports an incidence of infection of 5.6 per cent in a series of fifty-four cases, as compared with infection in 54 per cent of a control group of fifty cases. We had no gas infection in these thirty compound fractures, nor has this occurred in any other wound in which we have used sulfanilamide. Jackson reports none in the fifty-four cases treated in this manner but five occurred in the control group of fifty cases. Campbell and Smith report a reduction in the incidence of infection from 33.3 per cent to 18.1 per cent by the use of sulfanilamide locally. Jenson, Johnsrud and Nelson report a reduction in the incidence of infection from 27 per cent to 5 per cent by the use of sulfanilamide locally.

We know of no other treatment of compound fractures that offers such hope of complete recovery without disability as this method does. Therefore, we wish to emphasize its advantages and advocate its more general adoption.

A few illustrative cases are briefly described:

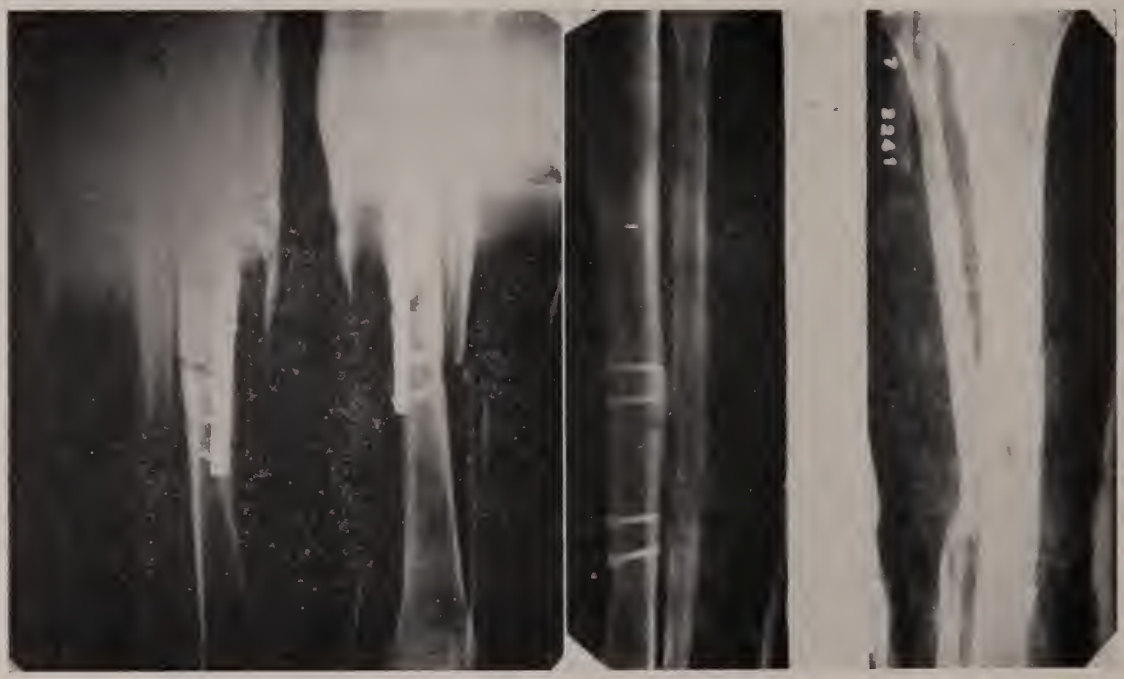
Case I.—Master K. H. W., white, male, fourteen years of age, admitted to the hospital February 8, 1941, with a compound fracture of the left tibia and fibula with extensive soft tissue injury and severance of the posterior tibial artery. The foot and leg appeared bloodless and it was feared an amputation would be necessary. The severed artery was ligated and the fracture reduced. The position was maintained with a four-screw vitallium plate and a cast applied. Sulfanilamide powder was dusted into the wound and the skin edges approximated without drains. Circulation was gradually re-established. The patient was dismissed from the hospital on the twelfth day. The cast was removed in eight weeks and it was found that the wound had healed completely without evidence of infection. This child was dismissed sixteen weeks from date of injury with no percentage of permanent disability.



Figs. V. and VI.—Case IV. Films taken before and after reduction showing satisfactory position maintained with vitallium plate.

Case II.—Mr. R. B. C., white, male, twenty-three years of age, admitted to the hospital February 28, 1940, with a simple fracture of the left tibia and fibula and a compound fracture of the right tibia and fibula. A closed reduction was done on the left leg; an open reduction on the right. Sulfanilamide powder was dusted into the wounds and the skin edges were approximated without drains. Position was maintained satisfactorily by the application of a cast without internal fixation. The cast was changed six weeks later. It was found that this wound was entirely healed and no evidence of infection was present. The patient was dismissed as cured in five months from date of injury with no percentage of permanent disability.

Case V.—Mr. J. L. M., white, male, fifty-six years of age, admitted to the hospital May 29, 1941, with a compound fracture of the right tibia and fibula. Under general anesthesia, the routine treatment for compound fractures was carried out. A six-screw vitallium plate was applied to the tibia, the skin edges were approximated without the use of drains and a cast was applied. The padded cast was removed June 27, 1941; the wound was found to be entirely healed and no drainage was present. The sutures were removed and a non-padded cast and walking iron were applied. This cast was discontinued August 12, 1941, and the patient was dismissed to return to work August 27, 1941. There was no permanent disability in this case.



Figs. VII and VIII.—Case V. Films showing position maintained satisfactorily by vitallium plate and showing bone graft held in place with vitallium screws.

Case III.—Master E. P., white, male, fifteen years of age, admitted to the hospital February 1, 1941, with a compound fracture of the lower end of the left radius and ulna. This child had fallen off a horse and the compound wound contained a large quantity of dirt. The wound was cleansed in the usual manner, packed with sulfanilamide powder, closed without drains, and a cast applied. This wound healed without any evidence of infection, and the patient was dismissed as cured eight weeks from date of injury.

Case IV.—G. B., colored, male, thirty-four years of age, admitted to the hospital November 8, 1940, with a fracture of the second dorsal vertebra and a compound fracture of the right tibia and fibula with extensive soft tissue injury. The wound contained a large quantity of dirt and gravel. Under general anesthesia, the wound was thoroughly cleansed, all foreign particles were removed and a careful debridement done. Reduction was maintained with a four-screw vitallium plate. A circular plaster cast was applied from the toes to about six inches above knee. Patient developed post- operative pneumonia and was critically ill for several

weeks. December 26, 1940, the cast was removed and wound dressed. It was then found that the wound had healed without any evidence of infection. The patient was dismissed from the hospital January 9, 1941, with a cast and walking iron in place.

Re-check x-ray from time to time showed no callus being thrown out. On May 14, 1941, the cast was discontinued and a brace applied. The bone still failed to show any evidence of healing. July 16, 1941, a massive bone graft was done. This graft was held in place with four vitallium screws. Sulfanilamide powder was dusted into the wound and the skin edges were approximated. This wound healed promptly and without evidence of infection. At the present time union has occurred and the patient is walking without support.

Summary and Conclusions: We have reported thirty compound fractures treated by implantation of sulfanilamide powder and primary closure of the wound. Twenty-eight of these cases healed by primary union, and in no case did a severe infection with systemic reaction occur. There were no cases of gas infection in this series of patients.

It is our opinion that the mortality and morbidity following compound fractures can be definitely lowered if the treatment outlined above is followed routinely.

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Lewis-Gale Hospital.

DIPHTHERIA IN A NUTRITION CAMP

I. Epidemiology, Immunology and Public Health Study*

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THE CAMP

Camp Augusta is situated in Augusta County, twenty-three miles west of Staunton, Virginia. This summer nutrition camp has for five years been financed by private donations and appropriations by the City of Staunton and the Augusta County Board of Supervisors. There have been experienced directors and a nutritionist, aided by counsellors who were high school or college students. Cooks and unskilled laborers have been furnished and paid by the W. P. A., the nutrition camp being listed as a W. P. A. project.

The buildings are those of an unused C. C. C. Camp which have been repaired and partly remodeled, making it an ideal summer camp location. There are a number of large dormitories with ample accommodations to take care of one hundred and seventy-five people. There is a large dining and recreation hall, a well equipped kitchen, an infirmary building, and several smaller buildings which are not often used.

This camp was inspected before its opening and was given a certificate of approval by the State Health Department. All buildings were well screened The sewage disposal system was entirely satisfactory, regulation pit privies being used. During the entire camp period the water supply was chlorinated and it tested bacteriologically pure by weekly samples sent to the State Health Department laboratories.

*This and the following paper by Dr. B. H. Payne were presented before the Augusta County Medical Society at its meeting in August, 1941.

Dishwashing methods had been greatly improved over those used in previous years. Every recommendation of the sanitation officer had been adopted and was carefully followed throughout the season. Dishes were allowed to dry in wire baskets, thus eliminating use of dish towels. In addition, since all food handlers were frequently examined during the outbreak and their throat cultures always found negative, we do not believe it probable that diphtheria spread through the kitchen or dining room at any time. No milk other than pasteurized milk was used.

HISTORY OF CHILDREN BEFORE THE OUTBREAK

A graduate nurse was always in attendance at Camp Augusta. She had a record of physical examination done on every child at the time of admission. They were nothing more than a transported group of school children, of whom about 90 per cent were known to have been immunized against diphtheria. (92 per cent later found to have had toxoid, negative Schick, or both.) Most of the children were selected because they were somewhat underweight or underprivileged and would be benefited by a vacation with good food and proper training. Ages 6-14, boys and girls.

Very few visitors had been allowed at Camp Augusta during the five weeks preceding the diphtheria outbreak. The usual term of the camp is six weeks. There had been no unusual amount of sickness among the children, although several had been in the infirmary a few days with sore throat. This had happened in camp every year among those with diseased tonsils. Staunton physicians had as usual alternated, without charge, in bi-weekly visits and in answering special requests of the nurse to see sick children. None of those with sore throat were suspected of having diphtheria until Dr. Marshall Payne found a suspicious throat on June 12, 1940. Diphtheria was verified by means of culture and smear. It was never possible to determine just how and why diphtheria first developed in this camp.

TWENTY-EIGHT CASES OF DIPHTHERIA

Immediately after diagnosis, the County Health Department was notified by Dr. Payne and asked to take necessary action at Camp Augusta. (Noon, June 13, 1940.) Because of the distance from town, all available material which might have been needed was taken to the camp. Diphtheria antitoxin was administered to three children in the infirmary found to have large tonsillar membranes. Assisted by a county health nurse this Saturday afternoon was spent by the Health Director in making examinations and in institution of quarantine. The situation was an unusual one and called for detailed instructions to a large number of people. All throats were inspected. We had a sufficient number of culture tubes to do throat smears on all food handlers and most of the adults. There was enough Schick material to test over half of the camp and this was completed the next day.

One wing of the infirmary building was isolated for observation of children with sore throat or any suspicious complaint. The set-up was necessarily a little different from that in a hospital ward and required considerable study to work out a safe routine for the camp nurse. Food handling, excreta disposal, changing of beds, and disinfection were some of the points discussed.

The camp leaders were then given instructions concerning care of the remaining 122 exposed children. The three patients had all been in the infirmary for several days before developing a membrane, so we hoped that our troubles ended at that point. Frequently children have been sent home from school with diphtheria and we have seldom had clinical disease in exposed classmates, over 90 per cent of whom are immunized in Augusta County.

Camp authorities were asked to arrange for the services of a physician who could spend any required amount of time at Camp Augusta. Dr. Boyd H. Payne accepted this responsibility and for several weeks made at least one trip a day to the camp. He has written a paper describing the very satisfactory response of patients to diphtheria antitoxin. Of considerable interest was one of his patients who developed nothing but diphtheritic conjunctivitis and marked edema around both eyes, showing evidence of unusual invasive action by the organism. There were no deaths or lasting complications.

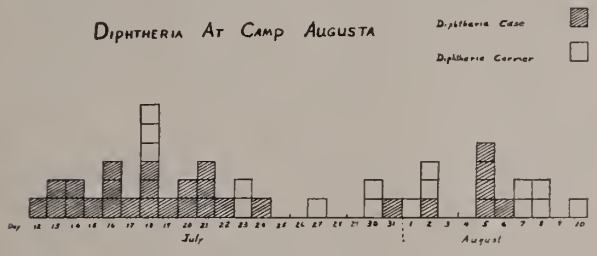
On our second day, Sunday, there were two new cases. Schick tests were completed and all children again inspected. (Schick control material was not available, but by recording 24-hour test readings the protein reactions could be distinguished.) Again much time was spent emphasizing to those in charge the requirements of isolation, disinfection, etc. Plans were made for obtaining a second nurse and opening a clean emergency ward in another building.

By Monday, June 15, several cases had developed

among those isolated for observation. Exposure of those remaining in this group had been so heavy that we decided to give all ten a prophylactic dose of 1,000 units of diphtheria antitoxin and placed them in an outlying building. Here they were completely isolated under care of a third nurse until they were sent home, none developing diphtheria. Two consecutive negative nose and throat cultures and no exposure to a known case or carrier during time of culturing were the requirements for discharge of any child from camp.

On June 15 sufficient tubes were obtained from the Luray Laboratory to make possible a throat culture on every person in camp. This nearest of State Laboratories is 57 miles away and with very poor train connections. Time lost was so valuable that, after the first two lots of cultures, we sent all samples to Luray by automobile and obtained results by telephone. The expense of such a method will be discussed in a later paragraph.

For the first ten days, one to three new cases of diphtheria were detected every day. (Chart) Three



carriers had been detected by positive cultures and these were the nucleus for a completely isolated "carrier" group which finally numbered about 15. The next eight days passed with only one new case developing. All children with positive Schick tests had been given prophylactic dose of 1,000 units of antitoxin on the 4th-5th day after testing. The situation seemed to be under control. Then during the next five days there were two cases and on August 5 there were four cases.

At this point it became evident that the disease was not being controlled by the best quarantine and segregation that we could possibly carry out. Several people in camp were scheduled soon to leave to attend college or for other good reasons, kitchen and W. P. A. labor were becoming dissatisfied and discouraged, and public schools were to open in a short time.

We had observed with considerable interest that none of the 25 children who had had tonsillectomies developed diphtheria. Members of the Augusta County and Staunton Boards of Health were consulted and much against the wishes of all of us it was decided best to give 1,000 unit prophylactic doses of diphtheria antitoxin to every child in camp *who had not had his tonsils removed.* This material was obtained and administered on August 7 to 44 Schick *negative* children. Not a case of diphtheria developed in camp after that date, although five new carriers were detected within the next three days.

Tonsillectomy Group Did Not Develop Diphtheria

The 25 children who had no tonsils were on August 7 re-assorted into two large groups of boys and girls, disregarding size and age. As previously observed, again none of these contracted the disease and none of the 25 were ever given antitoxin. It appears significant that these children had such a definite advantage in resisting the organism. Five of them were at one time or another diphtheria carriers. As would be expected, their throats became negative a little more quickly than those having tonsils. (Average release time 14.5 days as compared with 24.6 days.)

No Serum Reactions

Use of prophylactic diphtheria antitoxin appears to be universally frowned upon for exposed children of school age who can be closely observed, and especially where they are Schick negative.[1] We particularly disliked using unnecessary prophylactic antitoxin in this camp because we knew that the 125 children came from only 89 families and many were close neighbors after discharge. Some would necessarily come into later contact with cases or carriers released on the basis of negative cultures (supposedly non-infectious). Not more than 2-3 weeks' protection could be expected from such passive immunity and then serum sensitiveness was a very undesirable possibility to be reckoned with in case they developed diphtheria. Neither disinfection of belongings nor release cultures can always be perfect, so we were fortunate that diphtheria occurred in only two homes of the 125 children released from Camp Augusta. Three children who had prophylactic antitoxin at Camp Augusta required therapeutic doses 2-4 weeks later. We were exceedingly fortunate that none were serum sensitive at that time.

Of the children receiving antitoxin, three having

had a therapeutic dose developed mild urticaria, but none of those given prophylactic dose suffered any reaction. In reference to reactions, we have noted great improvement in diphtheria antitoxin during recent years.

PROBLEMS IN ISOLATION OF WELL CHILDREN

The swimming pool happened not to be in use for several days before the outbreak of diphtheria and at no time afterwards. Showers were only used by the "clean groups" with negative throat cultures. As a precaution, the floors were scrubbed by W. P. A. workers between times they were in use by any groups. Details such as thorough cleaning of wash basins, and even disinfection of toys, had to be strictly enforced. Counsellors saw that tooth brushes were not exchanged and that paper drinking cups were not passed around, but destroyed. There was a small penalty if a child was seen putting his fingers in his mouth.

The camp was large enough to permit the various "clean groups" of about fifteen children to be kept segregated. These groups played separately and had individual tables in the large dining hall.

Without going into further particulars, it can be said that we believe it nearly impossible for such a group of children to have been more carefully handled.

RESULTS OF CHECK ON INOCULATED CHILDREN

Of the 125 children in this camp, 116 or 92.8 per cent had been considered immune in school. The cases as related to kind of previous inoculation were as shown in Table I. These groups are too

TABLE I.—DIPHTHERIA AS RELATED TO IMMUNIZATION STATUS

No. Children	*Immunization*	*Contracted Diphtheria*	
13	Toxoid followed by neg. Schick*	3	(23%)
82	Toxoid only	20	(24%)
21	Neg. Schick only*	3	(14%)
116		26	22.4%

small for comparison of diphtheria attack rates. The fact of interest is that 22 per cent of 116 school children thought to be reasonably well protected contracted the disease. It might also be mentioned that the attack rate was highest in the 9 and 10 year old groups, being 36 per cent among those of 10 years. None below 7 years of age and only one above 11 contracted diphtheria in camp. There were only six present under the age of 7, however, but eighteen above 11 years.

*Refers to Schick test in school.

OUTCOME WITH 91 SCHICK NEGATIVE AND PREVIOUSLY INOCULATED CHILDREN

Of the 116 children previously immunized or found Schick negative in school, seventeen were at the onset of the outbreak given 1,000 units of diphtheria antitoxin either because of very heavy exposure or because of positive Schick test at camp. This leaves ninety-nine children, most of whom should have had sufficient immunity in case of moderate exposure to diphtheria. Ninety-one of these had been found Schick negative when tested during the first few days of the outbreak, eight having developed the disease before a Schick was recorded.

We are particularly interested in the ninety-one children who had received medical attention in school and in addition had been found Schick negative at the onset of the outbreak. For the ninety-one children in question, the attack rate was 17.6 per cent (Table II). Note that ten of these that developed

TABLE II.—CHILDREN WITH PREVIOUS PROTECTIVE MEASURES AND NEGATIVE SCHICK TEST AT ONSET OF OUTBREAK

*Time since Immunization**	*No. Children*	*Cases Diphtheria*	
Within 1 yr.	18	4	22%
1-2 yrs.	22	6	27%
2-3 yrs.	15	1	7%
3-4 yrs.	19	2	11%
Over 4 yrs.	17	3	18%
	91	16	17.6%

diphtheria had been considered protected in school within a two-year period. (Five had had alum precipitated toxoid, two had had negative Schick test only, and three had had toxoid followed by negative Schick tests.) The attack rate for the previously immunized children had been 22.4 per cent (Table I), but eliminating children protected with 1,000 units of prophylactic antitoxin we find that 26 per cent developed diphtheria.

COST OF OUTBREAK

Camp Augusta was scheduled to have closed on July 19, 1940, one week after the onset of diphtheria. Most of the children were released by August 12, but the last child did not leave until September 7.

*Received one dose of alum ppt. toxoid or considered protected on basis of negative Schick test in school. In addition, all these were Schick negative at onset of outbreak.

The total overtime expense for this camp was tremendous. Staunton and Augusta County authorities had asked the Health Department to keep every child under observation at Camp Augusta until he could be sent home without danger to others, so far as it was possible to determine. This was done with the result that there were no deaths, no lasting complications, and no appreciable spread of the disease.

The following is a list of unexpected expenses. No value is set for the time spent by the Health Department personnel in working with this outbreak because it is in the line of duties paid for when a county supports a health department.

Extra cost to W. P. A. (labor, drugs, supplies, etc.)	$1,613.74
Extra cost to Staunton and Augusta County (food, drugs, etc.)	1,688.65
Telephone calls to laboratory (Paid by State Health Department)	24.95

OTHER STATISTICS

Health Director

Trips to Camp and Luray Laboratory	42
Distance traveled (approximately)	2,128 miles
Time spent (approximately)	106 hours

State Laboratories

Nose and throat cultures	1,292
Virulence tests	34

COMMENT

Punch cards were used to record a large amount of information concerning each child in camp. Nothing of especial significance was found in studying time interval since child was immunized, kind of immunzation, or amount of alum precipitated toxoid given. In nearly all cases the agent used was one dose of Parke, Davis & Company alum precipitated toxoid. It is impossible to say that two or three doses of alum precipitated toxoid or some other kind of immunizing agent would have given appreciably better protection in this particular outbreak. We do recommend, however, that two doses of alum precipitated toxoid be given at the ninth month of life, with one month interval between doses; and that a single reinforcing dose be given when or preferably just before the child enters school. There is no desire that this paper should encourage unnecessary tonsillectomies as a factor in diphtheria prevention nor should it discourage the use of prophylactic diphtheria toxoid.

A number of outbreaks have been described in the literature in which the diphtheria bacilli appeared to possess an enhanced degree of malignancy or dispersiveness. In the famous outbreak at Leeds the organism showed cultural characteristics which were carefully studied and led to the classifications as "gravis" type of Corynbacterium diphtheriae.[2, 3] Underwood[4] in a study of the Leeds outbreak reported twenty cases of diphtheria in Schick negative individuals. Eighteen of these had previously received 2-3 doses of some standard prophylactic immunizing agent other than alum precipitated toxoid. The findings were in general very similar to those at Camp Augusta. Frobisher[5] in a study of strains of C. diphtheriae in various parts of the United States had noted a marked increase in the number of "dissociating strains" (showing instability) in Alabama, Virginia, and Michigan in 1939 over 1938. He stated "One wonders whether Virginia is about to be visited by diphtheria of an enhanced degree of malignancy or dispersiveness." To those who worked with the outbreak at Camp Augusta this reads like a true prediction.

SUMMARY

1. An outbreak of twenty-eight cases of diphtheria in a children's nutrition camp could not be controlled by the usual public health measures.

2. The camp facilities and handling were known and fully approved before the outbreak (water, sewage disposal, screening, food handling, infirmary, etc.). A careful study of the outbreak was possible.

3. One hundred and sixteen (92.8 per cent) of the 125 children in this camp had previously had alum precipitated toxoid, negative Schick, or both. Twenty-six (22.4 per cent) of these contracted diphtheria.

4. The protection given by one dose of alum precipitated toxoid was less than that reasonably expected and previously noted when immunized school children have been exposed to diphtheria.

5. The negative Schick Test was of very little value in determining state of immunity possessed by the children. The same applied whether the test was done in school 1-2 years previously, or in camp before diphtheria developed, or both.

6. Exceptions to statements 4 and 5 were shown by all children having previously had their tonsils removed. Although there were five proven carriers among twenty-five of these children, none had diphtheria. Predilection for tonsillar tissue was exhibited, with one exception of diphtheritic conjunctivitis.

7. The organism was of "gravis like" type, as

found by a complete bacteriological study in State Health Department laboratories in Richmond, Virginia.

CONCLUSION

We believe that we were dealing with a diphtheria germ which possessed or had developed increased virulence or increased invasive properties. The Schick test when negative did not indicate sufficient protection against slight or moderate exposure to the organism. Too many children were not adequately protected by alum precipitated toxoid received within two years' time. Exceptions to this were the tonsillectomized children who behaved "according to usual rules".

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DIPHTHERIA IN A NUTRITION CAMP
II. Treatment of Twenty-Eight Cases of Diphtheria*

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The immunology and possible etiology of this diphtheria epidemic has been discussed by one of us in another paper and, therefore, will not be presented as a part of this discussion.

The total number of cases included in this presentation is thirty-three. Twenty-eight of these were treated in the camp and discharged as well and free from infection as carriers. One was hospitalized and will be presented as a separate case. Four developed diphtheria in their home after having had a prophylactic dose and being sent home.

It should be pointed out that these children were seen twice daily by Dr. Turner in the morning and myself in the afternoon and on each occasion all suspicious cases were examined and therapy begun immediately when indicated.

The children with diphtheria ranged in ages from six to eleven years, inclusive. One was six years, five were seven, four were eight, eight were nine, ten were ten, and five were eleven.

SIGNS AND SYMPTOMS

The predominating picture of the children was that of extreme toxicity, whereas, in a few cases due to the early finding of the membrane they had few complaints. If these were watched for another six or eight hours, symptoms characteristic of those very toxic developed. On admission the temperature ranged from 98 to 103.6; pulse from 84 to 140; respiration from 18 to 36; indicating that the toxicity in some children was greater than in the others. Twelve of these had headaches, ten complained of sore throat, four had nausea and vomiting, one was perspiring freely and seemed to be in shock, one had nose bleed, one complained of pain in the stomach and one came in complaining of toothache with high temperature, one had impetigo. It might be pointed out at this point that six developed heart murmurs which disappeared after having been kept in bed two weeks and gradually returned to normal with limited exercise. The highest temperature range after the antitoxin was given was 99 to 104.6, the peak usually occurring about eighteen hours after the administration of the antitoxin.

The diphtheritic membrane was located in every case on the tonsil. There was no membrane involvement of the nasopharyngeal or laryngeal areas and those children who had had tonsillectomies did not develop a membrane, although a few were found to have positive cultures.

The membrane was a dull yellowish gray in color and seemed to resemble a follicular tonsillitis. A small spot the size of a pin head seen in the morning by afternoon would be as large as a dime and involve the whole tonsil. The tonsil itself would be bluish, swollen, and beefy in color and texture. It is interesting to note that there was no foul odor from these cases as is generally seen in the usual type of diphtheria. It was further noted that no

*This and the preceding paper by Dr. V. A. Turner were presented before the Augusta County Medical Society at its meeting in August, 1941.

cervical adenitis prevailed and the children did not complain of the glands in their neck being sore.

THERAPY

The antitoxin used was that of Parke, Davis & Co. An excellent response was usually obtained with one 10,000 unit injection. There were only five given more than 10,000 units. One was due to a relapse after two weeks in a child having had two negative cultures at five-day intervals. Another with involvement of the orbital tissues will be discussed in detail. Another seemed to be quite toxic and it was thought advisable to give additional protection. As soon as any complaint was noted by one of the counsellors or nurses the child was immediately isolated and put to bed, antitoxin given where indicated and the child kept in bed for seven days after the temperature was normal. He was then allowed to get up and walk about the room and go to the bathroom for another week, and then was permitted to go outside for an additional week during which time two negative throat cultures were obtained. Skin tests were done on all children before the administration of antitoxin. There was no sensitiveness shown and no immediate reactions from the antitoxin. Children were placed on liquids until the temperature was below 100 and then on soft diet. All of the antitoxin was given intramuscularly in the gluteal region. The only complications developing were heart murmurs as described above. A few of the children developed such high temperatures that they became delirious; ice caps and cool enemas being used to reduce the temperature. Neosulfanil was given to seven children at the onset. (The feeling was that it was possibly a mixed infection. In one case there was impetigo.) The heart murmurs soon cleared up under rest in bed and careful observation. There were no casualties from any of these cases.

HOME CASES

F. G., aged 9 years, was given 1 cc of toxoid in 1939 and was Schick positive at the outbreak of the epidemic. He was given 1,000 units antitoxin then and sent home two weeks later and developed diphtheria four weeks and two days after the 1,000 units were given. There was a high temperature, severe headache and sore throat. He was given 20,000 units due to the history of his being Schick positive and the failure of 1,000 units previously to hold him. His sister, B. G., was found to be a carrier in camp and was isolated until two negative nose and throat cultures were obtained. She was sent home four days prior to the development of diphtheria by her brother but did not develop diphtheria until five days after the onset of his diphtheria. She was given toxoid in 1939 and was Schick negative in the camp. Two other children in the household were given 1,000 units prophylactic dose at the onset of F. G.'s diphtheria but B. G. was not given this 1,000 units due to the fact that she had recently been a carrier.

Three children, ages 7, 10, 11 years, from another family were at camp. One of these and a brother who did not go to camp developed diphtheria after returning home. The child from camp was not a carrier, had had toxoid in 1934 and was Schick negative, but was given 1,000 units late during the epidemic with the group that had tonsils. Twenty days later she developed diphtheria. After the administration of 10,000 units antitoxin convalescence was uneventful and there were no complications.

REPORT OF A CASE OF CONJUNCTIVITIS DIPHTHERICA

G. P., aged 11, came to the infirmary at the camp on July 13 complaining of swelling of the eyes and headache. She was seen by me and examined with no evidence of any infection about nose, throat or tonsil area. There was no discharge or membrane over the eyes or over the conjunctiva. Due to the fact that she had been Schick tested it was thought at first that she had a protein reaction, as there was no increase in temperature, pulse rate or respiration. There was marked swelling of the orbital tissues but patient could open the eyes and see clearly. Ephedrine and sodium phenobarbital compound was given at four-hour intervals during the night with no improvement by the following morning. She was again seen by me and found to have a gradual increase in the amount of edema about the orbital tissues. Urinary specimen was obtained and examined. No casts, albumen or marked decrease in the specific gravity were noted. On July 15 the patient complained of intense headache and her eyes were aching severely. Cold applications were applied and cultures taken. On the 16th she was seen by Dr. Wm. Lueders in consultation and 20,000 units of diphtheria antitoxin was given intramuscularly. Patient was delirious, pulse poor and respiration markedly increased and there was eleva-

tion of temperature. Temperature at that time was 101, pulse 100, and the patient was brought to the hospital. On the 18th the temperature reached 104.6, pulse was 104, and respiration was 20. Cold boric acid compresses were kept over the eyes constantly, alternating with hot compresses. Patient was nervous and restless. Neosulfanil was given every four hours. She complained of marked soreness of the eyes and began crying because of pain in the eyes. Edema about the orbital tissues increased and there was protrusion of the eyeball. Patient became distended and was beating the bed with the body and fists. Morphine gra. 1/6 was given hypodermically. Compresses continued. On the 19th temperature was 103.6, pulse 94, respiration 20. Ten thousand units of diphtheria antitoxin was given intramuscularly. The following day the temperature dropped but patient continued to complain with marked pain in the eyes, crying out, and was quite toxic. Phenobarbital was used in conjunction with morphine, alternating the hours. She became very fretful and irritable and began expectorating a medium amount of whitish mucus. On the 20th the nose began bleeding. Patient was placed on sulfapyridine—½ tablet every four hours. On July 23 patient's temperature began to rise again. There was no improvement in the edema of the orbital tissues and each eyeball was markedly protruding. Twenty thousand units of antitoxin was given intramuscularly with a portion of this dropped in each eye and injected into the orbital tissues. Hot and cold compresses were continued to the eyes. Three hours later the temperature rose to 103.2, pulse 92, respiration 22. Patient drank liquids quite freely. Magnesium sulphate compresses were used on the eyes and the temperature began to drop. On July 25 it was noted that the eyes were not quite so painful as previously, the patient was not restless, and it was felt that some of the edema had diminished. On July 28 examination of the upper lids revealed some softening of the swollen area and each eyelid was incised by Dr. Lueders and a large amount of purulent exudate was obtained and the culture sent to the laboratory. Patient rested better and did not complain of extreme pain in her eyes or severe headache. The lids continued to drain and recession of the edema began. Patient was discharged improved after fifteen days in the hospital and remained at home in bed for two additional weeks due to the general weakness and fear of cardiac involvement. For a time there was adhesion of the supra-orbital tissues to the orbital ridge and drainage continued. This, however, eventually cleared up with total recession of the eyeball and no disturbance in vision. Patient had no complications following this illness. This patient was Schick negative just before onset. The cultures obtained from the eyes showed gram positive cocci singly and in pairs with some staph. albus and also many diphtheria bacilli present in formation. For this reason the sulfanilamide group was given in the treatment.

According to the literature there are two types of this conjunctivitis diphtherica: One, the superficial form which clings firmly to the conjunctiva but may be detached with forceps; The other, the deep form which this patient had, is of the infiltration type not involving the conjunctiva primarily but the soft tissues about the eyes. The lids are greatly swollen, red and tender on pressure. In especially violent cases the lids are of board like hardness. When the exudate within the tissue of the conjunctiva itself has already coagulated the vessels are compressed, the mucus membrane becomes stiff and void of blood and falls prey to necrosis. It is reported that conjunctivitis diphtherica occurs in those countries in which diphtheria is in general frequent and especially at times when epidemics of pharyngeal diphtheria rage.[1]

SUMMARY

1. Twenty-eight cases of diphtheria were treated in the nutrition camp. One was hospitalized in Staunton, Virginia. Four occurred in two homes following the discharge from camp.

2. An organism of the gravis-like type was encountered, as shown from cultures examined and a study made at the State Laboratory, Richmond, Va. The location of the organism showed a predilection for the tonsils. No children having had tonsillectomies contracted diphtheria. The course of the disease usually developed rapidly, producing severe toxicity as shown by the signs and symptoms. Heart murmurs developed in six cases, but with no permanent involvement.

3. After discharge of children from camp diphtheria occurred in only two homes. There were no deaths as a result of the outbreak and no permanent disability.

4. One case developed orbital cellulitis with no nose or throat involvement.

5. There was no serum sickness as a result of the antitoxin. Urticaria occurred only in three cases and then in a mild form.

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Professional Building.

PRESENT DAY CONCEPTS OF CANCER OF THE CERVIX*

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My interest in cancer of the cervix dates back nearly forty years to the time when, as an interne, I watched the earlier cases being treated by the Wertheim operation with its high immediate operative mortality and its very low percentage of five year cures—the clinical grade 3 malignancies treated by the vaginal hysterectomy done with the heavy Ferguson clamps with the detachable handles to be removed about a week post operative with practically no five year salvages. I recall the grade 4 cases treated with chloride of zinc packs with almost no improvement in their condition and of course no ultimate cures.

About 1915 we began using the Percy cautery in the far advanced cases, still reserving operation for the grades 1 and 2. The Percy cautery gave us an immediate amelioration of symptoms. It stopped the hemorrhage and sloughing and cured the local condition almost as well as radium. The objection to it was that, to use it properly, it required an abdominal operation, frequently in patients who were exceedingly bad risks, and necessitated nearly a three weeks stay in the hospital. It, of course, could not relieve metastases outside of the uterus itself even when in the pelvis.

About 1919 we began using radium, at first in small doses with an interval of about three weeks between the applications; usually three applications totalling from 3000 to 4000 mgm. hours. The radium was poorly screened and not very well applied. Still we found that we could do as well as with the Percy cautery at much less risk to the patient, and occasionally we had five year survivals.

About 1930 we began to use larger doses of radium, better screened and, I hope, more intelligently applied, and to supplement it with deep x-ray therapy.

Believing that the treatment of cancer of the cervix is more standardized at the present time than the treatment of any other malignancy, we have recently sent out a questionnaire to 28 of the leading clinics in the U. S. and Canada. Twenty of the questionnaires were returned, in a good many instances with personal letters from the heads of those clinics; and I wish here to acknowledge my indebtedness to them and my appreciation of their cooperation. I would like to give you briefly some of those replies and then try and give you a composite picture of the way cancer of the cervix is being treated today in those clinics.

The first question was: Are any cases of cancer of the cervix considered operable? 7 answered yes; 13 no.

The second question was: If yes, what are the indications for operation? The replies were: "A few clinical group 1 carcimonas", "Early leukoplacic type, histologically grade 1", "Young women with an early lesion": "Early adenocarcimona which has not responded to irradiation in one month", "Early carcimona with inflammatory pelvic lesions or pelvic tumors".

The third question was: How much radium is used? The replies varied from 4,000 to 10,000 mgm. hours.

The fifth question: What screening is used? This answer was fairly constant. From .5 to 2mm. platinum, occasionally with brass, usually with rubber additionally.

The sixth question was: Is the total dose of radium given at one time? 12 answered yes, 7 no. Those who said no usually gave three treatments from one to three weeks apart.

The eighth question: What amount of x-ray do

*Read at the annual meeting of the Medical Society of Virginia at Virginia Beach, October 6-8, 1941.

you give and the number of portals? The replies stated from four to eight portals; from 8,000 to 16,000 "r" total given over a period of from three to six weeks.

One question was: Do you give x-ray intravaginally and in what dose? 13 answered no. Those that answered yes gave from less than 1,000 to as much as 7,000 "r". One stated that he used intra-vaginal x-ray where radium was contraindicated because of pelvic infection.

The five and ten year salvages varied. The average for the country generally is a five year survival of 31.2 per cent for all cases treated and a ten year survival rate of 18.1 per cent. The five year survivals of clinical grades 1 and 2 run well over 50 per cent. The survivals for grade 4 are less than 2 per cent. Dr. George Gray Ward has published reports of 711 cases with 98 per cent follow-up with 55.8 per cent survival in early cases and 21.4 per cent in late. The Mayo Clinic reports 91.8 per cent follow-up on 1,491 cases with an average survival rate of 41.4 per cent of five year survivals and 25.7 per cent ten year survivals.

Several of the clinics have reported that they occasionally use interstitial irradiation, either with radon or needles containing a small amount of the radium element. Drs. Pitts and Waterman feel that they have a slight increase in their five year salvage. Recently Drs. Teahan and Wammock reported a small series of cases in which they had opened the abdomen and placed needles in and around the cervix from the vagina guiding them in place with a hand in the abdomen. It is too early for them to evaluate this method of treatment in five year cures.

The question: Has your five year salvage improved since the institution of x-ray? This was usually answered in the affirmative. None definitely answered in the negative. One stated he was not sure.

One question asked was: What do you do if a large fibroid complicates the picture? The replies were: "Ignore the fibroid and treat the cancer."

Question 20 asked: What percentage of cancer of the cervix is of the adeno variety? Does this influence your treatment? The answers varied from .6 of 1 per cent to 10 per cent, with the exception of one clinic that stated his pathologist called 85 per cent adeno. All except one stated that it did not influence their treatment. That clinic treated adenocarcimona of the cervix exactly as it did adenocarcimona of the fundus; that is by radium followed by complete hysterectomy, to be followed by deep x-ray therapy. That clinic's total five year salvage in all cases seen is 40 per cent. That same clinic stated also that they did a pan-hysterectomy followed by deep x-ray therapy for large fibroids complicating early cancer of the cervix.

The question was asked: What was done for hemorrhage? And practically invariably the answer was packing.

To the question, Do you use radium or x-ray first? Practically all stated x-ray first. They were asked if they always used x-ray in clinical gradings 1 and 2 and the answer was yes with the exception of one clinic. That same clinic uses radium in broken doses before x-ray.

In summary, then: Cancer of the cervix in the larger clinics in the U. S. and Canada is being treated, regardless of the clinical or pathological grading and regardless of complications, in the following manner: First, by deep x-ray therapy which contemplates the giving of from 8,000 to 16,000 "r" through from 4 to 8 portals, front, back and lateral, over a period of from 3 to 6 weeks; Then in a single dose, in the majority of cases, from 5,000 to 10,000 mgm. hours of radium. About one-third of the radium is placed in the uterine cavity from the fundus down and about two-thirds of the radium packed around the cervix in the vagina, the screening being equivalent of at least 1mm. platinum. One clinic is using a much larger dose of radium for a much shorter number of hours of application but the total number of mgm. hours is about the same.

I would like to discuss with you the complications with which we have had to cope. The first is secondary anemia and infection. We believe that this is best treated by repeated transfusions and in some instances we have had to give from 4 to 8 as the x-ray treatments proceeded. We almost invariably put these patients on iron and vitamin B compounds. Probably the nausea which accompanies irradiation is best controlled by thiamin chloride. At times we have to supplement the iron with liver preparations.

The next most serious complication is hemor-

rhage, which frequently depletes in a short time all the efforts we have made to build the patient up. Like those who replied to our questionnaire, we have usually used packing. However, on the suggestion of Dr. Murray Copeland I have recently tried acetone in some four or five cases. The patient is given some form of an anesthetic, generally a small amount of spinal, and put up in a Trendelenberg position. The clots and sloughing tissue are removed and the vagina is filled with straight acetone solution. This is allowed to remain in place for about ten minutes. Then it is carefully swabbed out and the patient returned to bed. We have tried this five times and only one of the patients had a return of her bleeding a short time before her death.

Another complication is the pain in the late stages of the disease. We have tried almost every thing except chordotomy. We have used the spinal injection of alcohol. My present reaction to this is that it should only be used in bed ridden patients. We have had some patients who were unable to walk after its use. I believe there is a definite place for cobra venom provided the patient is not a drug addict before we begin it. It does not cure drug addiction. However, the opiate can be considerably reduced. We usually give .5 cc. the first day; then 1 cc. a day for three or four days. After that it may be cut to every second or third day. When it becomes necessary to use some form of opium, dilaudid is probably preferable, since it does not produce either the nausea or constipation of other opiates. A large number of our patients are clinic patients and economics play a part in relieving their pain. We have found that we can control the pain, in some instances, by combining a quarter of a grain of morphine with ten grains of chloral.

Another complication which we have encountered is pregnancy. If the condition is discovered early we think the pregnancy should be ignored. The patient should be given a full dose of deep x-ray therapy and if an abortion does not occur by the end of the treatment the pregnancy should be terminated and the cervix treated with radium in the usual manner. If it is discovered late, after the viability of the baby is well established, a Caesarean section should be done and as soon as the patient has recovered from her section the usual treatment for cancer of the cervix should be instituted.

Since we began using radium in 1920 we have seen a total of 350 patients with cancer of the cervix, all of whom have been treated with radium in varying doses. In the earlier years we were not using x-ray at all but at the present time practically all of them are being treated with x-ray. Seventy-five per cent of these patients were clinic and about 50 per cent were negroes, naturally a very bad set-up for statistical study. Of the 350 patients 190 of them are known to be dead, 148 lived less than three years. The average length of life from the time we saw them was 10.5 months. Twelve lived more than 3 years and less than 5; eight lived more than five years and died of conditions other than cancer. Fifty-four of the 350 we cannot trace. Of those who died there was no case in which we gave a clinical grade 1. There were fifteen in grade 2, sixty-five in grade 3 and 81 in grade 4, or a total of 80 per cent graded 3 and 4. Twenty-three were not graded. In this group twenty-four developed either a vesico or recto-vaginal fistula or both. This has been a very annoying complication and we did permanent colostomies on four patients who had recto-vaginal fistulas without any vesical leak. We feel that they were made more comfortable for the length of time they lived, by diverting the intestinal contents. Only two of these patients were cured of their cancer, so we feel that the fistula was the result of the cancer and not of the irradiation.

Of the 106 who are now living seventy have been under observation less than three years; 13 from 3 to 5 years; 19 between 5 and 10 years and four more than 10. Of these, 7 are considered grade 1, 31 grade 2, 51 grade 3 and only eight grade 4. Seven are ungraded. In this group, still under observation, only three have developed fistulas. In the entire series there have been only eight cases developing cancer in the vaginal stump. Four of these developed within a year and I think should be considered as having been present at the time of the supravaginal hysterectomy. One, however, occurred 25 years post-operative and the patient had never had a pregnancy. Another occurred 40 years post-operative and that patient had been delivered by Caesarean section followed immediately by a supravaginal hysterectomy.

We have been unable to prognosticate the likelihood of survival from the pathological grading. Theoretically the highly anaplastic, undifferentiated grade 4 should be much more radio-sensitive and should carry a higher percentage of cures. We know, of course, that the survivals in this grade of tumor are much less than in those tumors considered pathologically grade 1 and 2.

The clinical grading gives us a much better estimate of their life expectancy. We realize that there can be very little salvage in the clinical 3 and 4 types. However, we rarely give the patient's family any encouragement as to the ultimate outcome until we see what the response to irradiation is.

Medical Arts Building.

DISCUSSION

DR. C. J. ANDREWS, Norfolk: Mr. Chairman, like Dr. Rawls and perhaps many of you, I have been interterested in cancer and its treatment for a considerable period of time.

There cannot be any doubt that we are greatly handicapped by the fact that we do not know what cancer is, or what causes it.

It is quite possible that some time some of these unknown things may become known, and we may be far more successful than we are at present. There are many things we do not know about it, and one of these Dr. Rawls alluded to, but he did not make much of it. He says most of his cancer cases are clinic cases. It is a well-known fact that cancer is more prevalent among the indigent and semi-indigent than in the higher brackets.

The statistics as to percentages of cure of cancer is somewhat discouraging but it is evident that a considerable number do get well and stay well. This means that cancer is curable. There is a widespread belief among the laity and, I am sorry to say, among some doctors that no one gets well of cancer, and both use this as an excuse for neglecting early care.

The obstetrician has a wonderful opportunity to prevent cancer by treating the cervix following labor until healed and then impressing upon these patients the necessity of returning to some doctor every year until the menopause has passed.

Dr. Ross, of Duke, has called attention to the relation of indigency and mal-nutrition to toxemia of pregnancy. If it could be shown definitely that cancer is more common among the under-privileged class it would at least suggest a relationship.

Cancer of the fundus of the uterus seems to occur more frequently in fat women. Excessive weight does not necessarily mean that the individual has been correctly nourished but might give suspicion that an endocrine dysfunction might be an associated etiological factor.

So far as the treatment of it is concerned, Dr. Rawls has given you an exceptionally authoritative statement, not only from his own wide experience, but from the clinics of others. I do not believe we can do much better than that.

DR. RAWLS, closing the discussion: I would like to say just one word about the paper of Dr. Hoge yesterday afternoon, a point that he mentioned but did not stress, and that is the question of biopsy. He made a statement that you should be exceedingly careful when you make a biopsy, and my reason for stressing that is this: Four or five times that I can recall, patients have been sent to us for treatment with far advanced carcinoma with the statement of the attending physician that biopsy had been made several months before and that he received a negative report of malignancy, and he took it for granted that the malignancy had developed since he had seen his patient. The malignancy was there, and I suppose he got the biopsy from the wrong site. I think that the biopsy should be most intelligently taken, and I think if possible that the biopsy should be taken through a sufficient area of tissue, if not actually into the normal tissue, so that the pathologist would have an opportunity to compare the grades of his cells and be sure that he interprets it properly. Quite recently a very excellent surgeon called me one day and said he would like for me to see a case that he had, a patient in his office that had a very peculiar looking cervix, and he had taken biopsies from it, made three or four different ones, and they were all reported as negative, and he decided he would destroy the granulation by cautery. When he took the patient in to the hospital they took another biopsy; this was reported as unmistakable carcinoma.

SOME ASPECTS OF SUICIDE*

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Although attempted suicide is generally considered evidence of a severe emotional disturbance, and thus a problem that should concern the psychiatrist primarily, it is a fact that suicidal patients are usually first seen by the practitioners of other branches of medicine. For this reason, a study of the subject of suicide should not be limited to those patients receiving psychiatric treatment in mental hospitals or

*Read at the staff meeting of the Medical College of Virginia, November 13, 1941.

elsewhere, but should also include cases met with in the general practice of medicine. A general hospital, and preferably one to which many emergency cases are brought, is therefore the best place for such a study to begin. On the other hand, the records of such a hospital will naturally be lacking in completeness, from the psychiatric standpoint, for in most instances the patients who have made an attempt are seen only by members of the medical or surgical services, whose interest lies primarily in the management of the physical aspects of the problems presented and not in the investigation and treatment of psychiatric difficulties. Ideally, the management of the suicidal patient brought to the general hospital should include the services of a psychiatrist, and the individual who has made an attempt should not be discharged until a psychiatric examination has been made. This practice has been followed at the Medical College of Virginia Hospitals since the establishment of a psychiatric in-patient service, and was followed to a limited extent before that time. Unfortunately, this practice has been of such limited duration that the findings in these cases cannot be presented here.

It is the purpose of this paper to indicate the magnitude of the problem of suicide in this area, to remove some misconceptions regarding the subject, and to present some of the symptoms that may precede an attempt in the hope that efforts at prevention may be made in the future. The material to be presented is taken from information that is being collected for a larger and more complete study and represents findings from the hospital records for the years 1937, 1938, and 1939. For purposes of comparison, a study of the coroner's records relating to suicidal deaths in the entire city for the same time interval has been made. With few exceptions the patients were residents of Richmond, and those who did not live here came from nearby communities. None were patients in mental hospitals. The figures obtained can give only an idea of the incidence of suicidal attempts in Richmond, for many deaths listed as "accidental" must often be suicidal. Furthermore, it must be remembered that in those cases where the attempt has been unsuccessful, only the figures from the Medical College Hospitals have been obtained, yet we know that many would-be suicides are taken to the other hospitals in the city or treated at home. Even in the records from the Medical College Hospitals, it was often possible to gain information only from reports hastily made out in the Emergency Room for the police, and some cases must have been overlooked.

In spite of the difficulties mentioned, it was found that there were 302 attempts made in the three-year period, with 107 deaths as a result of these attempts. This means that each year there were *100.6* attempts made (approximately 50 per 100,000 population), and *35.7* deaths (approximately 17 per 100,000 population). If it were possible to get accurate figures for the entire city, the figure for the number of attempts would undoubtedly be markedly increased, and the figure for the number of deaths would show some increase, though it would probably not rise in proportion to that for unsuccessful attempts, since the figures given include all cases of suicidal death in the city reported by the coroner, but only those unsuccessful ones reported by the Medical College of Virginia Hospitals. It is fully realized that suicide must be considered merely as a sign or symptom which may occur in a number of different types of emotional disturbance, but surely any "symptom" which results in a mortality rate of approximately 17 per 100,000 is deserving of more serious consideration on the part of the medical profession as a whole than this one receives.

It is of considerable interest to note that the number of known attempts made by negroes appears to be much less than that by white people. The records of St. Philip Hospital, one of the Medical College of Virginia hospitals, have been included in this study, and this hospital receives by far the greater number of colored patients in the city. There is only one other negro hospital here, and it has a smaller capacity than St. Philip. For the entire three-year period the combined coroner's and hospital records show a total of only forty-four attempts made by negroes. This represents 14.5 per cent of the total attempts listed, and since the colored population of Richmond is more than 15 per cent of the total, it would appear that the negro is less prone to suicide than the white. These findings disagree with those of Piker[1] who made a study similar to this one and reported that in Cincinnati the rate of suicidal attempts among negro men was essentially the same as that of white men per 100,000 population and was much greater among negro women than white women. Dr. H. C. Henry (personal communication), formerly superintendent of a mental hospital for negroes, reports that successful suicides were relatively infrequent among the population of that hospital. No seri-

ous suggestion as to the reason for this difference has been offered, and the subject is one which awaits further study.

An analysis of the total figures shows that there were 152 attempts by men and 150 by women, or essentially an equal number of attempts by each sex. However, the results of these attempts show a marked difference, for 81 (53 per cent) of the men succeeded, while only 26 (17 per cent) of the women did. The explanation for this discrepancy in results appears to lie in the choice of methods used, the men selecting the more lethal means (such as gunshot), and the women the less successful (such as various household poisons). An analysis by age and sex is also of interest, for it is found that women are more prone to make attempts before the age of 35, while men show a maximum of attempts after that age. On the other hand, when only the successful attempts are considered, both sexes show the larger number in later decades of life.

In passing, it might be worth while to point out that there has been a gradual rise in the number of *reported* deaths from suicide in Virginia since 1926. It is virtually impossible to say whether this rise is a true one or simply represents an increased accuracy in the reporting of causes of death. For example, so much pressure is brought on the physician by friends and relatives of the deceased when suicide is suspected that one must be inclined to doubt the validity of the figures.

The hospital and coroner's records studied in the preparation of this paper were not sufficiently complete for any real determination of the causes that lay behind the acts. It has long been recognized by psychiatrists that the suicidal attempt is usually the visible manifestation of some deep-seated emotional disturbance, and it is seldom caused entirely by any conscious disappointment or strain experienced by the individual. The patient himself often lacks comprehension of the true motives behind an attempt, and it frequently requires a prolonged period of psychiatric study to bring these motives into consciousness. There are many instances where suicide has occurred with an apparent absence of reasons for the attempt—and it is in such cases that the friends of the patient are most apt to insist that the death was accidental. On the other hand, the patient may have had such emotional tensions brought about by inner conflict over past experiences and behavior that suicide seemed the only way for him to gain relief. Certainly, there is little evidence for the belief that suicide is caused by such vague things as "the strain of modern living," "the depression," "prohibition," "repeal," "the uncertainty of the times," "lack of social security," etc. It is true that our environment has an effect upon us, but there is good evidence that the suicide rate among more primitive people who did not have the "advantage" of such civilized tools as the telephone, the automobile, the bomb, and the machine-gun, was just as high as it is now—and in some instances much higher.

The methods used for attempts can be roughly summarized as poisoning, gunshot wounds, asphyxiation, jumping from a height, stabbing or cutting, and drowning. The favorite method for both sexes was poisoning, but death was produced most frequently by the other methods. Very few women, relatively speaking, made attempts by gunshot or cutting instruments. It would appear that in general the individual tended to use something with which he was familiar, and the seriousness of the attempt could not be gauged by the means. For example, a very large number of women used such common household poisons as bichloride of mercury or lysol—both of which are used commonly for douches. On the other hand, men tended toward the use of the gun or the razor. Tincture of iodine was used largely by both sexes, and there was even one death caused by the ingestion of this relatively innocuous drug.

Some physicians appear to believe that the method used gives an indication of the seriousness of the attempt, but the findings do not bear this out. It must be remembered that the average layman has so little knowledge of pharmacology that he believes many drugs are very toxic, when the facts are otherwise. For example, many lay people believe that aspirin has a toxic effect upon the heart, and, consequently, will attempt suicide by taking ten or fifteen aspirin tablets. The same holds true for tincture of iodine, which is sold in small bottles bearing prominent "poison" labels. As an example, we may take the case of a white woman of 53, with symptoms suggestive of involutional melancholia. She attempted suicide by asphyxiation in July, 1938, but was not sent to the hospital. A month later, she made an attempt by drinking a mixture of various medicines, and again was treated at home. Three weeks after this, she drank four

ounces of lysol, and was treated in the hospital. The family refused to allow her to be committed and she was taken home. For the next few months, nothing was heard from her, but in February, 1930, she was treated in the Emergency Room after having taken 180 grains of aspirin. Ultimately she was committed to a mental hospital. This case is cited to indicate that the patient's lack of knowledge of the action of drugs may lead to suicidal attempts which appear absurd to the physician, and thus may be considered of little significance.

Another false concept frequently expressed about suicide is that most attempts are made solely to gain sympathy, and the individual really does not want to succeed. There can be no doubt that an occasional attempt is made with this idea, but I believe this is the exception. The individual making the attempt for sympathy is much more likely to have such a thought as expressed by the child who says after punishment, "You'll be sorry when I'm dead." In other words, the patient wishes to hurt someone by his own death, and thus is honestly trying to kill himself, even though he is trying to gain sympathy at the same time.

Another false idea is that often heard regarding a successful attempt at suicide, namely, "He's better off dead." This implies that the suicide would have been doomed to a lifetime of insanity if he had not succeeded in his attempt—yet the facts do not bear this out, for the overwhelming majority of cases in this series who failed in the attempt have recovered from the emotional turmoil which brought it on and adjusted again to life. In fact, in a few instances, the attempt appears almost to act as a form of "shock therapy," and brings about a recovery from the mental symptoms.

Regardless of whether or not the patient becomes mentally normal after a suicidal attempt, there is no justification for the immediate adoption of an attitude of pessimism because an attempt has been made. As an example, the case of a young woman who developed a depression, may be quoted. She first attempted to drink tincture of iodine, and since this did not bring about the desired result, she jumped from a high bridge two days later. No injuries of significance were produced, and as she was still depressed she was admitted to a mental hospital. She recovered from her mental illness within two months and is now making a comfortable adjustment at home. Although the planned follow-up of cases in this series has not yet been made, there is good reason to believe that a suicidal attempt is by no means a sign of chronic mental illness, and that if the attempt is prevented, or the patient survives the attempt, the prognosis is not necessarily bad.

Another misconception regarding suicide is that the person who really intends to kill himself never talks about it beforehand, while the one who seeks only to gain sympathy always does. This idea is totally false, and it is relatively rare to find the suicide who has not given some previous indication of his intention. By this I do not mean that a note is left, for it is unusual to find such a note, but rather that the individual indicates his intention in some other way. A study of suicides occurring in a mental hospital[2] showed that in every instance there was a definite warning—often in the form of direct threats—prior to the attempt. The same situation occurs in practice outside of the mental hospital, and every physician should be on the alert for signs of impending suicide in his patients.

Prior to an attempt, a patient usually appears mentally depressed, though this may not always be the case. The depression may be of short duration and may not necessarily seem intense. Very frequently, the individual expresses fear of having contracted some chronic, incurable disease which will bring about a slow and painful death. The reassurance of the physician that this disease is not present is rejected, for the patient believes he is trying to hold back a painful truth. In consequence, an attempt at suicide is made to prevent the expected prolonged suffering. In view of this fact, it is always wise to observe carefully the patient with severe hypochondriacal ideas, especially if the expression of these ideas is accompanied by evidences of agitation.

Another prodromal sign is insomnia—not the occasional inability to sleep that may be found anywhere, but rather a persistent sleeplessness associated with the patient's fear that the loss of sleep will have grave consequences for him. Patients with this type of insomnia often feel that they will become insane if the loss of sleep continues, and death may seem preferable to their conception of insanity. Associated with this state is any condition in which there is persistent inner tension, and a fear of "losing control" over one's actions.

Still another sign is a sense of guilt, with persistent belief in and concern about punishment.

The patient may never have actually done anything seriously wrong, but if he believes that some past behavior has been unpardonable and that he will be punished for it, suicide may be the means of escape he uses. Such patients often conceal their thoughts from the physician and superficial examination will not be productive.

A history of a previous, half-hearted or serious attempt in a depressed patient often suggests that another attempt will be made. This has already been indicated in the case of the woman who made four attempts, and further discussion of this is not necessary. Incidentally, it might be pointed out that a family history of suicide is not good, not because of heredity particularly, but rather because the individual in a family where suicides have occurred may have a more tolerant attitude toward the subject than others.

Finally, the most frequent sign of an impending attempt is found to be in the patient's own statements. He frequently says such things, as "I wish I were dead," "If there were only some painless way to kill myself, I would do so," or "I wish someone would put me out of my misery." Remarks of this sort are often treated too lightly, and it is frequently very difficult to get members of the family to realize that such a patient is in need of temporary protection from his impulses.

SUMMARY AND CONCLUSION

In this paper, it has been pointed out that in the Richmond area there is a death rate of at least 17 per 100,000 by suicide, and a rate of more than 35 per 100,000 of attempts. Negroes appear to be less prone to suicide than white people. Women make attempts more frequently than men, but have less success. Some of the common misconceptions regarding suicide have been discussed, and some of the evidences of impending suicide have been presented.

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FROM THE COUNTRY SIDE*

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This gathering each year brings us closer to one another in a mutual bond of friendship, loyalty, and admiration—first, in the homage we each pay our benefactor and teacher, whom we all hold dear in our hearts; second, in the new inspirations we gather thus, with scientific facts and theories discussed fully both formally and informally; and, last, the fellowship that it affords radiating the success and splendor of the work done in this institution where most of us were born in our medical and surgical training under a firm guiding hand.

I feel humble, endeavoring to bring to this gathering a scientific message or report that is worthy of its intelligence. However, I shall try to estimate and give each of you a look into the daily thoughts of a rural general practitioner. I might begin by saying that the doctor in a rural community is not only an artificer in the practice of medicine, but also has to appear in roles far from the doors of scientific medicine. One has to be honest and fearless, and must have an unquestionable character; his integrity must be unchallenged. This, too, extends to any man doing anything for his fellow man, his country, and above all for his God. To be a diplomat, a father confessor, a go-between, and in some cases even a politician, is in all essential. We meet those from every walk of life, the rich and the poor, and must be able to give to each the best in us.

The material necessities are usually found in a small yet adequate office with comfortable facilities to care for the sick. I shall not bore you by recalling all the armamentarium that is necessary, as you each know this well. I shall mention a laboratory that is limited usually to routine blood counts and urine and gastric analyses. Some are more fortunate with portable X-ray units, electrocardiographs, diathermies, ultra-violet lamps, and other such things that are very handy to have but are above his means or are impractical for the average man.

*Read before the St. Elizabeth's Hospital Ex-Interns Association, at Richmond, Va., October, 1941.

We practitioners have, like the specialists, case histories, limited laboratory examinations, and physical examinations. I will not go farther than to mention these vitally important steps in the practice of medicine. Now let us go farther into the general practitioner's work. It is usually a twenty-four-hour schedule. The coming of night brings fear to one's being. We are apt to be called for any trivial reason. It is important to the ailing patient, no matter how insignificant to the welfare of his future. Office hours are from 9:00 A.M. till 9:00 A.M. One cannot establish any precedent with the uncertainty of sickness or death as to hours of work. We all merrily roll along to the end as best we can. Problems that arise in the rural communities are not, generally speaking, so far different from the ones every specialist meets. Often I have heard that the specialist is a man who knows more and more about less and less; conversely, the general man knows less and less about more and more. I am sure that while in theory this can be true, yet in actual fact it is not so true.

I shall now divide the different specialties from a general man's view. *First,* surgery. The general man who has access to a first-class hospital nearby is very fortunate, and this is usually found in our communities. Our work is referred to men who are doing surgery every day. I have always believed that the combination of general practitioner and surgeon is basically wrong. There are some who do quite well with this set up, but others who fall down badly. In my opinion, unless a man is doing surgery every day and unless his work is surgery, he has no right to do surgery of any import. Here I believe it would be well to say, "To know and be positive of one's limitations in his work is truly a great asset." I do not mean lack of courage or conviction, but the lack of experience in surgery is a great factor in poor surgery. As rural men we can help the surgeon by the careful study of each patient, the early hospitalization of cases of appendicitis, and the recognition of all acute abdominal emergencies. I can see no excuse for delay in getting any surgical condition to a hospital. I would much rather have a dozen questionable appendices removed than have one that was ruptured. The early investigation of digestive symptoms by X-ray would lessen the incidence of cancer of the stomach and large bowel that reach the surgeon byond all hope of recovery. The same is true of the careful investigation of all breast tumors, eroded cervices, the casual non-healing lip sore, and by all means the recognition of importance of rectal examinations.

Surgery to the average general man is limited to very minor work and simple fractures. These latter should all be X-rayed regardless of how simple the fracture is. However, even the most simple of minor surgical work is ofttimes accompanied by danger. This should be reckoned with and strict aseptic precaution taken in all instances. The cauterization of a non-prepared cervix is inexcusable, but is done every day. The suture of dirty wounds done without debridement and adequate anti-tetanic serum administration is an error that happens too often. So, in resume of the surgical side of general practice, I say, "Know your limitations. Do a careful history and physical, and avail yourself of as much laboratory data as possible. Hospitalize early all major cases. Use intelligence in handling all minor conditions with aseptic precaution, and recognize the need of A. T. S. administration. Do these things, and you will greatly enhance the value of the general man to the surgeon."

Second, medicine. The general man finds a more open field to do his own work, relying on the internist for more technical and special knowledge. The referring of patients is usually for X-ray work, electrocardiography, and special work as in allergy and bacteriology. Otherwise, except for the demand of very definite specialization, the rural man can do all of his own work. The advent of the sulfonamide group for chemotherapy has opened the doors of treatment to the physician in the rural areas. Pneumonia has been handled with far greater efficiency with a lowering of mortality rates far byond anyone's expectation. The typing of pneumonias by the Neufeld method is practical and easily done by the rural man. This, of course, brings up the use of serum for the various types of pneumonias. Frankly, I have not used serum since the advent of sulfathiazole and sulfapyridine. This is due to two factors: First, the serum is entirely too expensive for the usual clientele of a rural community; second, the availability of different type serum in the nearest drug store is problematical.

The results so far obtained in my practice lead me to believe that chemotherapy is more practical and is more beneficial as a general thing. We usually see pneumonia late, and serum is not as efficacious then as when given earlier. In the past two years

I have treated 123 cases of lobar and bronchopneumonia, with two deaths, one having an ensuing empyema of streptococcic origin, the other with kidney complications and a type 3 pneumonia. So, practically speaking, chemotherapy has been a great thing to me in my cases of pneumonia. Heart cases are managed very well at home up to certain points. When an oxygen tent is necessary, or when extensive laboratory work or cardiography is indicated, then hospitalization is essential. Even then necessity may lead us to do the best we can at home, when hospitalization is impossible.

I would like to mention for a few moments coronary occlusion. This situation comes to the general man in many roles, such as acute indigestion, gallbladder colic, acute pancreatitis, and arachnidism. This diagnosis can be made in most instances if the attack is typical. The early history may present symptoms of fatigability, a tired feeling in the legs, insomnia, vertigo, gastric distress, hallucinations of sight and smell, substernal discomfort and breathlessness, the last being probably the most important. Coronary occlusion may and does occur under almost any circumstances, whether the patient is resting, working, or playing. The onset is contrary to the usual onset of angina pectoris. The latter is nearly always precipitated by effort or exertion either emotional or physical. There are to my mind immediate and delayed signs and symptoms of coronary occlusion. The first usually include pain, heart failure syndrome, shock and collapse, and, of course, quite often sudden death. Pain may be missing, but if present, is usually a vice-like pressure in the lower sternal or epigastric region. It may be diffuse and may spread to any part of the chest, arms, neck or head.

The lower sternum is the usual site of onset, and the pain of angina is more in the precordial area. Much pain is usually attended by a bordering collapse. The patient is anxious, weak, and sweating. Usually a cyanosis and pallor prevail, giving a light blue ashen color which is almost characteristic of the disease. The pulse is thin and thready, the blood pressure is lowered with all the signs of shock present. Later signs, if the patient survives the first few hours, are leucocytosis, fever, occasionally a friction rub, and embolism. Fever is low—up to 102 F. White cells vary from 10,000 to 25,000. When the pericardium is involved, a friction rub is present, usually appearing on the second or third day. It is transient or lasting, and may be important in diagnosis of doubtful cases. Embolic processes may be evident in the kidney, spleen, cerebral and pulmonary systems. Rupture of the heart is due to a weakened myocardium, and occurs rarely before the fifth day or after five weeks.

Coronary occlusion pain is usually rhythmical and periodical. This syndrome is helpful in ruling out other conditions. There is a striking similarity of the pain with those of labor pains. The course of pains is of some prognostic value. Pains which are short in interval and long in duration, as in the last stages of labor, are of grave nature. Those long in interval and short in duration, and of weaker character, as in uterine inertia, give a better outlook.

In my opinion the early diagnosis of coronary occlusion and its treatment is one of the greatest importance. I give my patients the following instructions:

1. Rest one hour after meals, relax and try to sleep.
2. Do not over-exert to the point of fatigue.
3. Avoid sexual excesses.
4. Eat plainly, small meals, avoiding foods with high cholesterol content.
5. Eat slowly, avoiding extremes in hot and cold drinks.
6. Avoid effervescent medicines.
7. Do not walk fast up hill or stairs or against the wind.
8. Avoid constipation and straining.
9. Avoid worry, hurry, and quarrels.

Rest, morphine for pain, adrenalin and coramine for shock and collapse, judicious use of oxygen therapy for breathlessness, are all essentially the important drugs of choice. Theobromine derivatives in combination with phenobarbital are of value in early or suspicious cases.

Digestive tract disturbances, after full laboratory data is obtained, can usually be handled at home with some degree of satisfaction. Diets necessary in diabetes must be rigidly watched and frequent blood sugars done to maintain reasonable safety. Tuberculosis is being handled through the state sanatoria, with the help of Public Health Service clinics, where fluoroscopy is done on all suspects the general man finds. All school children as well as their teachers are given tuberculin tests. We are isolating T. B. cases in Birch Cottages when the

ever-crowded sanatoria cannot accommodate them.

Another condition that calls for a great deal of careful study is that of arachnidism. In the past four years I have had at least a dozen cases of spider bites by the Black Widow specie. The bite of the Black Widow presents at times a difficult case for diagnosis unless a very energetic history is taken. I can recall one case in which there was certain evidence of a ruptured peptic ulcer that cleared up when I finally wormed out the fact that, while in an outdoor privy that morning, the patient felt a stinging sensation while at stool. This led to the correct diagnosis. The treatment in my opinion is the use of morphine in adequate dosage, calcium gluconate intravenously and intramuscularly, fluids, and hot tub baths. I allow a patient to stay in hot water for hours, as it has relieved the majority of the cases that I have seen. I am sure that in instances of a bite on the upper extremities coronary occlusion might be thought of until the history of a sting or bite was obtained. Prevention of arachnidism can be helped by having sanitary privies in the rural communities and educating the people as to the eradication of the Black Widow. In our rural communities this is a real problem and one that might lead to disastrous operations unless a careful history is taken. All in all, the general practitioner is more able to take care of the usual cases of internal medicine at home and in his office than surgical patients.

Third, perhaps pediatric conditions are our greatest problem, along with obstetrical care. The sick child calls for treatment not only of the child but of his parents as well. Feeding problems are always difficult and far too numerous to go into, with the exception of mentioning that in my community lactic acid evaporated milk is a boon to the situation. Vitamin therapy is essential, beginning not later than the first month. Preventive medicine plays a great part in immunization of children against typhoid, diphtheria, pertussis, tetanus and smallpox. Several years ago in my county of twenty thousand people, eighteen thousand were vaccinated for diphtheria and typhoid fever. This is a great record and was done by the eight physicians residing there. Diarrheas and dysentery, appearing in the spring and summer, are the most difficult and frequent problems confronting us. This is usually a feeding problem or an infection secondary to feeding. It is also seen in the company of parenteral infections such as tonsillitis, otitis media, mastoiditis, and malaria. The treatment in most of my cases has been routine starvation for forty-eight hours with the exception of fruit juices, and Ringer's solution by mouth. Sulfathiazole is given, grains one to one and one-half per pound of body weight per day. The eradication of infections and the management of reasonable feeding problems are essential.

A very important thing in my opinion is the feeding of Ringer's solution by mouth. This is prepared by prescribing a twenty-five times the normal concentration of Ringer's solution, directing the mother to put two and a half tablespoonfuls to a quart of boiled water, adding a tablespoonful of sugar or a coca-cola to disguise the taste. You will be astounded at the amount that a desperately ill child will take when it will take nothing else at all. This replenishment of the electrolytes of the blood and tissues of the elements lost in diarrheas and vomiting is life saving. Of course, parenteral fluids are necessary at times. Here Ringer's solution in saftiflasks under the skin or intravenously is advantageous. Solution of sodium lactate of 1/6 molar strength is efficacious in the treatment of acidosis in children. Blood transfusions are necessary and easily given in the office or home. With sulfathiazole, Ringer's solution, and blood transfusions, the problem of diarrheas has been greatly simplified in the past two years. Sulfathiazole is used because of its low toxicity and less frequent reactions. The use of vitamin K orally to the mother, intravenously or intramuscularly to the baby, has cut early blood dyscrasias and intracranial hemorrhage in the new born.

In otitis media of children I am certain there are very many different schools of treatment. I see a great many cases. I find that in my hands sulfathiazole used early, nose drops to produce postnasal shrinkage and drainage, auralgan or 3 per cent phenol in glycerin as ear drops, aid in aborting this condition. I believe in myringotomy when the drum is definitely bulging with the short process obliterated—not before. I am sure the incidence of mastoidectomy is cut down by the use of the sulfonamides. Drooping of the posterior superior canal wall, prolonged purulent drainage, and continued high fever are indications for X-ray of mastoid process. Involvement requires surgery. Some authorities believe in letting the drum rupture spon-

taneously. I would not let a localized abscess elsewhere do so, and certainly not here, where pressure might spread the infection into the mastoid cells. Some advocate the use of X-ray therapy in treating the low grade mastoid infections. I cannot comment on this at this time, as I have not seen this done in enough cases. I am certain that the above method of treatment has proven successful in my hands.

Fourth. In obstetrical practice which is apparently always increased in a war period, there is much to say and it cannot all be done here. However, I might say the normal case depends greatly on stringent pre-natal care. This is being emphasized in North Carolina at the present time by Maternal and Infancy Clinics held over the entire state. Important in this are personal and family history, past and present, a careful physical examination with pelvic measurements, laboratory work often. Blood pressure readings and weight chart are essential monthly in the first trimester, bi-weekly in the second trimester, weekly in the last trimester. Dietary discretion is emphasized early; vitamins A, D and K with calcium are advisable. The normal delivery under aseptic precautions is not necessary to dwell on. Operatively, low forceps, episiotomy, versions and extractions are ever presenting themselves. For the most part through necessity, a great number are done at home. These are problems that at times get out of our hands. Then hospitalization is necessary. I wish all women could have the benefit of a hospital at this time. I have recently been using sulfathiazole powder in the incision on all episiotomies, of which I do a great many on primiparae. Then repair by suture gets good results.

Exhaustive papers could be written on this, but as time is limited I only wish to speak hurriedly on these things. Eclampsia and toxemias are handled best in hospitals though I have had to handle them at home many times. The prime thing is the prevention of these with adequate pre-natal care. Miscarriages and premature births are handled as conservatively as possible, and sent to the hospital. The greatest menace to the mother and child other than toxemias, hemorrhage, and infections is the midwife. The only way to redeem this is by educational methods in rural communities. So much for the obstetrical problems as seen by the general practitioner.

These preceding facts are far from the entire story. I shall dismiss the problems of genito-urinary patients with these few words. The treatment of these patients in the office and home is usually limited to mild or moderately severe infections such as pyelitis, gonorrhea, cystitis, and prostatitis. Here, too, the sulfonamides have been a great help. Ureteral stones, blocked kidneys from ureteral strictures, kinks and the stases seen in pregnancy are hospital cases. I have done cystoscopic work in the office, but feel that X-ray is necessary, and I send my cases to the hospital.

The problem of education of patients is a vast one. In North Carolina today Maternal and Infancy Clinics are held monthly, Venereal Disease Clinics weekly, vaccination for the prevention of typhoid, diphtheria, and smallpox every year. Federal authorities are sending cattle inspectors to stamp out Bang's disease and tuberculosis in cows. Midwife clinics are being held to try to raise their standards and slowly weed out the "granny". Child health, maternal health, and venereal disease control are playing a great part in helping the rural physician.

In closing this resume, I trust that I have mentioned a few of the things that confront those of us who live in rural areas. We are dependent on the specialist, and, in turn, the specialist depends on us. One without the other would result in a state of chaos. Each has his place in the forwarding of medicine.

As to the financial gain of the rural man, there is a comfortable living to be found—some good years, some bad. All are taken in stride. Farm products such as poultry, eggs, vegetables, and hams are used as payment when money is scarce. Then, last, but not least, there is the pay of a mother's eyes when her baby is brought back from the clutches of death, the smile of a suffering child when relieved. In short, when his work is done honestly and well, I am sure that there is no touch so near to that of God's hands as those of this man. He is loved and held dear to the thousands of hearts that come to him from the country side.

OBESITY—CAUSE, HANDICAP, AND TREAMENT—A REVIEW

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Obesity is a condition in which there is an abnormal deposit of fat due in most cases to the ingestion of food beyond the caloric needs of the individual. The condition is widespread, does not receive the serious attention it deserves, is the cause of much disability, and in the vast majority of cases is preventable.

Prevalence.—There exists in the mind of the laity, and apparently among the majority of the medical profession, a misconception regarding obesity. It is generally accepted without question that a certain rather large proportion of humans are destined by fate to become fat, and that there is nothing which can be done about it. These people invariably insist that they are not heavy eaters. They point out that all their family become fat, and that they stay that way regardless of what they eat. Consequently, they make no effort to diet, or make only a half-hearted effort, which they abandon upon the slightest excuse.

Handicap.—It is in this group who consider themselves as inevitable victims destined by fate to become obese, that we see the expanded waist-lines, the sagging jowls and double and triple chins, the over-flowing drooping structures artificially confined by cleverly designed contrivances, the short of breath, panting, puffing people who have become pitiful parodies of what nature designed them to be. Casual observation will convince the most skeptical, but the designers of clothes for both sexes are so clever at concealing the true state of affairs, that the bare, bald, alarming truth can only be properly appreciated at a well-frequented bathing beach. As the weight increases and fatty tissues over-flow beyond the bound of even the best of artificial controls, these poor self-deluded people become self-conscious, and are then the object and victims of extensive advertising campaigns. Open any newspaper or magazine and you will see on every side offers of products to lighten the lot of the obese. The corsetiere, the girdle manufacturer, the uplifter, the contour imitator, the beautician, the chin strap, the hip reducer, the calf and thigh reducer, the exercise machine, the clever designer, all offer their services, guaranteeing to regain or preserve the maiden form or youthful silhouette. Salts, packs, baths, tablets, wafers, salves, and massage, all assure reduction without effort. Relief is promised for the sour stomach, the acid indigestion, the sluggish liver, the torpid bilious state, the constipation, the lack of energy, the sluggish feeling which the overstoked engine has developed. And by this time the poor, over-stuffed lard skin has lost all confidence and all hope, so he tries them all, to avoid the disagreeable necessity of self-denial at the dining table.

Standards.—Obesity is so frequent as to be almost the rule, but is not normal. Insurance mortality tables have long proven the advantage of being slightly over-weight during youth, but slightly underweight later. The standard tables for weight, based on age and height, are merely averages and, since they include large numbers of the obese, are overloaded. Ward gives the rough rule for calculation of normal weight as 110 lbs. in the male (the female 10 lbs. less) for 5 ft. of height, with the addition of 5½ lbs. for each inch above 5 ft., and also details an over-weight index arrived at by dividing the actual weight by the ideal weight. He charts the index as 1 plus up to 1.25, 2 plus from 1.25 to 1.50, 3 plus from 1.50 to 1.75, and 4 plus over 1.75, and states that the 3 and 4 plus categories should always be reduced. Evans states that there should be a gradual reduction of weight after age 35, averaging about ¼ lb. per year, since after this age there is a wasting of muscle mass, and maintenance of weight is due to adiposity. He allows 10 lbs. for the bony framework, depending upon the individual build. It is so well known, as to be almost axiomatic, that the average individual begins to put on weight in the late twenties, and continues to gain through the 3rd and 4th decades. Evans says the next great public health advance should be the control of these abnormal metabolic states.

Dangers.—There was a time when corpulence was a mark of honor; when obesity indicated prosperity. The mean, the sly, the tricky, treacherous, grasping character was portrayed as the lean and hungry type, while the jolly, sunny, happy, successful man was stately and portly. That tends to be the general idea at present, and combined with it is the humorous characterization of the fat man. Someone said there are three stages of obesity, the stately, the comical, and the pitiful. Generally absent from lay

thinking is the truth that the obese individual has become so because of the lack of self-control, and that there are very definite dangers and disabilities which result from obesity. Life insurance statistics prove the shortened life expectancy, but, as Evans states, the markedly increased disability from circulatory, metabolic, and endocrine disorders among the obese, is of infinitely more importance than the shorter life span. The greater incidence of diabetes (Joslin "most important single factor"), circulatory diseases (2½ times as great among the obese), cardio-renal states, and biliary disease, are well known; likewise, the justifiable reluctance of the surgeon to operate on the obese because of the poor operative risk and greater incidence of infection. The frequency of arthritis and fibrositis, which often become disabling and result from strain imposed by the excess weight is noteworthy. The metabolic disturbances described by Musser and Wright of the vicious circle of obesity, hypertension and hyperglycemia, which is corrected by dietary reduction, returns if the weight is regained. Endocrine disturbances, according to Wilder, more frequently are caused by the obesity than the reverse. The earlier onset of the degenerative diseases, the embarrassment and humiliation, and the resulting inferiority state and involuntary isolation which obesity frequently produces, are more serious than is implied by the laughing remark, "nobody loves a fat man." The previously quoted classification of obesity into the three stages of stately, comical, and pitiful, might more accurately be stated as treacherous, dangerous, and calamitous.

Causes.—What causes obesity? There is, and can be, but the one cause—over-eating. Food taken into the body is utilized as a source of energy, and for tissue building or repair. That portion not needed for those purposes is stored as fat. Excessive alimentation results in the accumulation of fat; undernutrition results in loss of weight. There are no exceptions, though the process is influenced by hereditary factors and endocrine balance. The lowered metabolic balance of the hypothyroid patient results in the deposit of fat only when that patient receives more food than his reduced energy requirements demand. The descendant of fat forebears himself becomes fat because he continues the tradition of excessive consumption of rich and high caloric foods. If his diet is reduced he loses weight.

Hunger vs. Appetite.—Hunger and appetite are not synonymous terms though they are frequently interchanged. They are the bodily sensations which lead to the intake of food. Hunger is felt as a dull ache or gnawing sensation referred to the lower sternal and epigastric areas, is caused by periodic contractions of the empty stomach, only begins after the stomach has been empty for sometime, occurs when the sugar content of the circulating blood falls about 25 per cent, and may be abolished by the first few mouthfuls of food. Appetite is related to previous sensations of taste and smell of food, has important psychic elements in its composition, and implies wishing, longing or yearning for something desirable. The person influenced by appetite is tempted, he seeks satisfaction and wishes to renew previous pleasures. Hunger is a primitive elemental sensation imperiously demanding relief and may be readily abolished by food, while appetite still calls. The sensation of satiety, of fullness, of having had enough is the control, but fails to operate, or operate soon enough, in the obese. The discomfort of the obese patient on a reducing regimen is rarely due to true hunger sensations, but it is rather the dissatisfaction of a person accustomed to having his desires and wishes fulfilled who suddenly meets denial.

Classification.—There are various classifications of obesity. The simplest and most frequently used is to divide obesity into types as either exogenous, or endogenous. The exogenous supposedly representing those who over-stoke the engine with food, and the endogenous presumably representing that group who store fat regardless of the food intake, because of some innate metabolic or endocrine disorder. The intake of food is a function of the body which is not entirely automatic but is influenced by free choice and habits, and is affected by numerous exogenous and endogenous factors. Generally publications on obesity stress more the faults in energy expenditure or metabolic anomalies than errors of the food intake. Food is often mentioned only as a seemingly minor factor, as compared with the underlying endogenous disturbance, diagnosed as endocrine dysfunction. Such publications give the impression that their authors consider obesity as a condition in which the law of conservation of energy does not hold true. The concept of obesity as either endogenous or exogenous is based on the conception that the energy requirements, and oxidative processes, of an obese are different from those of a normal person. Newburgh and Johnson conclusively demonstrated that

the energy exchange in obesity is normal, and that under-nutrition in the obese produces exactly the anticipated loss of weight that occurs in the normal person. They conclude that all obesity is simple obesity, namely, due "to excessive inflow of energy to the body". Beardwood classifies obesity as due to—

1. Exogenous—hyperalimentation
2. Endogenous
   a. Endocrinopathy
      1. Thyroid
      2. Pituitary
      3. Adrenal
      4. Gonad
   b. Nervous
   c. Defective water metabolism
   d. Defective salt metabolism

The exogenous is demonstrated by the symmetrical distribution of the fat, chiefly under the skin, in the omentum, the mesentery, retroperitoneum, and, if extreme, may infiltrate all organs of the body. The endogenous type refers to metabolic disturbances associated with endocrinopathy and presents the clinical picture of localized fat about the supraclavicular spaces, the neck pads, the breasts, abdomen, waist, ankles, and the hip girdle. The endogenous may be associated with undeveloped genitalia, castration, amenorrhea, menopause, hypothyroidism, known pathology of the pituitary, and is also associated with pathology involving nerve centers in the diencephalon which is generally of greater importance than is the pituitary.

Unquestionably the vast majority of fat people are so because of the purely exogenous factor of excessive eating. The avenue to obesity is through the mouth, quoting Spriggs, who says, "nearly every person who is over-weight reaches that condition because of over-eating and under-exercise". No abnormalities of energy metabolism can be demonstrated in the obese; the resorption from the alimentary tract is not different from that of the normal person, and under-nurition results regularly in a predictable loss of weight. An excessively large and poorly balanced diet, with a preponderance of starchy carbohydrates, was invariably found by careful checking. The statements of patients regarding their food intake, while made in good faith, are notoriously unreliable. Kirch found that only 15 per cent of the obese patients acknowledged over-eating, while 13 per cent described their food intake as small, though detailed records of their food consumption disclosed a 24-hour caloric intake of from 2,900 to 3,500 calories, and when a group were put to bed on a diet 200 calories in excess of their basal requirements practically all complained that the diet did not satisfy their appetite. In the pediatric literature, obesity among children has been largely classified as of endogenous origin, but in contradiction the authors have stressed the necessity and efficacy of dietary restriction in treatment. When careful food histories are obtained, children, as well as adults, are found to eat excessively. Frequently failing reduction on a prescribed diet, loss of weight proceeded normally when the same diet was given under controlled conditions in the hospital. The intake of obese children not only was found excessive in quantity, but one-sided and poorly balanced, and frequently the caloric value of the food taken between meals exceeded that taken at meals.

It is maintained that what is originally an exogenous obesity may become endogenous by throwing excess burden on organs or glands controlling the oxidative processes.

There is a group who are obese and who definitely demonstrate disturbances in the endocrine function. That group discloses the typically abnormal distribution of fat, and gives a history of menstrual and other disorders. It is a small group in which metabolic balance and oxidative processes are at a low level. The much larger group are those less clearly endocrine in origin, but in whom the question of endocrine dysfunction arises. The thyroid is the organ most frequently implicated followed by the pituitary. Lauter, after investigation of the various components of energy expenditure, the basal metabolism, specific dynamic action of food, and oxygen consumption during physical exercise, observed that the caloric output of an obese person is equal to or even surpasses that of a normal person and concludes invariably that the positive metabolic balance, as expressed in fat accumulation, results from an intake of food in excess of bodily requirements. He found that patients suffering from endocrine forms of obesity consume amazing quantities of food, exactly as do patients with obesity due to causes other than endocrine dysfunction. Bulgar, Dunlap, and Lyon concluded that the thyroid plays a lesser role than once suspected, found only a small per cent of obesity due to hyperthyroidism, and stated that even though endocrine dyscrasias may play an important role, the fact re-

mains that excess weight must represent an intake of food beyond body requirements. Short and Johnson note the marked increase in total metabolism and moderate increase in basal metabolism in the obese. Accompanying that fact is the usually increased resting pulse rate which indicates to them an increased thyroid (metabolic?) activity in the obese, which favors a rapid loss of weight on dietary restriction. They conclude that the employment of metabolic stimulants, while normal basal and high total metabolic rates prevail, is illogical and contraindicated. Evans states that the basal metabolic rate though apparently low, is actually increased, because of the increased surface area and oxygen consumption and that the endocrine system governs the distribution of fat but the cause of endocrine obesity is over-eating. Spriggs found B. M. R. of 49 per cent of obese patients normal, 36 per cent above normal, and only 15 per cent reduced below normal, when calculated on the basis of ideal rather than actual weight and surface area. He considers the stored fat negative tissue.

The obesity influenced by those endogenous factors classified as nervous, like other nervous conditions, may be divided into the organic and the functional. Lesses and Myerson state that obesity may result from defects of the appetite regulating mechanism, especially that control factor of satiety or satisfaction. Metabolic abnormalities may be represented by the two extremes of the bulimia of hyperthyroidism, and the anorexia of Addison's disease. Diseases of the central nervous system, as cause of increased appetite, are illustrated by cases of brain tumor, and functional examples are those Kirch described as being due to a "diencephalon weakness" in which desire for food persists in spite of the ingestion of adequate quantities. Rennie states that obese individuals are frequently attempting to obtain surcease from the worries and stress of life in the enjoyment of their food. Myerson termed this "restless seeking for stimulation which may find its outlet in frequent eating" as "anhedonia," and concludes that the syndrome of anhedonia may be associated with neurosis and advises a psychotherapeutic approach. These patients present personality factors productive of states of tension, anxiety, and depression which may result in considerable increase of weight during the period of personality upset. Fatigue of the neurasthenic type may be a frequent symptom. These people get relief in periods of emotional excess by nibbling food; they use the food as a comfort in combating unpleasant circumstances. Hockman states that compulsive eating is part of a defense mechanism for combating anxiety. Conrad stated that such refusal of food or excessive or specific demand was an expression of the personal need and emotional maturation of the individual. Alexander said the wish to be fed was, in the subconscious, identical with the wish to be taken care of, to be helped, and to be loved. Wilder expressed the opinion that simple obesity may be due to functional derangements of the same centers which are involved in organic lesions. Homburg counted obesity among the habit disorders.

Examination.—Treatment should not be undertaken without a thorough study of the patient, which includes careful history especially into the dietary habits of the patient and his family. Complete physical examination should note especially fat distribution, condition of the skin, shape of the hands and feet, and state of the cardio-circulatory system. Laboratory examinations include presence of anemia, condition of the kidneys, basal metabolic rate, and frequently a glucose tolerance test.

Treatment.—When all has been said about the cause of obesity, whether endogenous or exogenous, whether endocrine or nervous, the fact remains that the human engine has no safety valve to blow off when fuel is shoveled in faster than the energy can be utilized. Consequently, when the intake of food exceeds the output of energy, fat is deposited. That fact simplifies the matter of treatment which essentially consists of a reversal of the process. Undernutrition produces a definite and predictable loss of weight in the obese, whether the factor of an endogenous element is present or not.

The diet should consist of approximately 1 gm. protein per kilo. of ideal, not actually attained weight, from ¾ to one gm. carbohydrate to each gm. protein and less than 25 gm. fat, in the 24-hour peroid. The carbohydrates should be of the 5 or 10 per cent variety to provide bulk, the proteins should be the complete proteins of milk, eggs, cheese, and meat, and the vitamin requirements should be taken care of by use of fish liver oil concentrates and yeast. Little or no fluid should be taken with the meal, but water, especially carbonated water (Evans), between meals assists in allaying the hunger which is experienced at first. Alcohol must be prohibited, as must the highly seasoned condiments

because of their appetite stimulating effect. Salt should be restricted.

Consistent adherence to such a diet will soon produce the desired weight reduction. At first there may be some water retention, giving a false sense of weight maintenance, and also at first the patient may complain of weakness, which feeling is soon replaced by one of well-being. After the desired weight level is reached the patient must continue on a diet which will maintain weight at the desired figure.

What of the other factors so frequently used in efforts at weight reduction?

Exercise is desirable, and should be used but carefully graded to the age, physical state, and cardio-circulatory condition of the patient. Evans states that reduction by exercise alone is impractical on account of the time required and the usually impaired condition of the circulation and the joints of the obese.

Drugs are of three general types—those used to correct the endocrine dysfunction, those used to stimulate the metabolic and oxidative processes, and certain drugs at times beneficial in correcting the mental state of the patient. Thyroid extract is the drug most frequently used, and functions both in correction of the endocrine disorder of hypothyroidism and of stimulating metabolism. It should be used when there are definite evidences of hypothyroidism and sparingly when diet and controlled exercise fail or the reducing process is slowed up. The dose should be small and gradually increased, watching the effect, and using the smallest effective dose. Clear cut pituitary obesity is rare. Mild cases are probably common, but treatment with the various pituitary preparations is unsatisfactory. Ovarian preparations should be used in appropriate cases. The suggestion that lowered oxygen carrying capacity of the blood in anemia results in slowing of the bodily oxidative processes, illustrated by the increased obesity (92 per cent) among women, who average lower hemoglobin percentages than men, brings forward the interesting point that correction of the anemia by administration of iron may be helpful in treatment of obesity in women. Dinitrophenol, by the stimulation of metabolism, will reduce weight. It has been extensively used, and harmful results are infrequent, but in my opinion such a potentially harmful drug has no place in the treatment of obesity. Benzedrine sulfate, by relieving some measure of depression and fatigue, relaxing gastro-intestinal spasm, and improving the state of mind, affects the urge to eat as a means of filling out the empty existence of patients of the type referred to by Myerson. Similar results have been reported by Greene with belladonna and phenobarbital or bromides. Psychotherapy, with intelligent assistance to the patient in solving his problem, is essential to get him to cooperate in dieting.

STANDARD DIET SUITABLE FOR CONTROL OF UNCOMPLICATED OBESITY
(Modified from Evans)

	Grammes of			
Breakfast	Carbohy.	Prot.	Fat	Calories
Tea with 2½ oz. milk (5 tablespoons)	4	2½	3	53
1 egg	–	6	5	69
1 rasher of bacon	–	5	15	155
2 unsweetened biscuits	12	–	–	48
Butter ¼ oz. (size of half walnut)	–	–	6	54
Dinner				
Meat 2½ oz. (large portion)	–	25	5	145
Green vegetables, a large portion	5	–	–	20
1 unsweetened biscuit	6	–	–	24
1 orange, apple or pear	10	–	–	40
Tea with 1 oz. milk	2	1	1	21
Tea				
Tea with 2½ oz. milk	4	2½	3	53
2 unsweetened biscuits	12	–	–	48
Butter ¼ oz. (size of ½ walnut)	–	–	6	54
Tomato with little cress or lettuce	1	–	–	4
Supper				
Meat or cheese 2 oz. (fair portion) or fish 6 oz. (large portion)	–	20	4	116
Salad, lettuce, cucumber, tomato, etc. or 1 portion of fruit	5	–	–	20
1 unsweetened biscuit	6	–	–	24
Butter ¼ oz. (size of ½ walnut)	–	–	6	54
	67	62	54	1,002

CONCLUSIONS

1. Ultimately all obesity is simple obesity, namely, due to the intake of food beyond the caloric needs of the individual. Endocrine factors, when present, determine the distribution of the fat, but over-eating is the cause.

2. Obesity is a disabling and dangerous state which is entirely preventable.

3. Treament must be directed toward a reversal of the causative factor, over-eating, and under-nutrition consistently adhered to results in a definite and predictable loss of weight in the obese.

4. Drugs, and glandular products, should occupy only a minor place in the treatment of obesity, and then used only as adjuncts to the main factor which is consistent, controlled reduction of the caloric intake.

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SYPHILIS OF THE LUNG: REPORT OF THREE CASES

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The total number of cases of syphilis of the lung is small, but enough have come to necropsy and diagnosis to call attention to the fact that it is one of the possibilities to be considered in chronic pulmonary disease.[1] Clinical manifestations are not distinctive, and it is impossible to determine from symptoms, physical signs, and laboratory studies whether or not the condition is present. At necropsy, although certain characteristics of the lesions are accepted as typical, the pathology is not definitely established, as is evidenced by the difference of opinion among writers on the subject.[2] The following cases are reported because the diagnostic criteria appear to be sufficiently fulfilled in each instance to warrant classification as syphilis of the lung.

Case 1. A white married woman, 61 years of age, was admitted to the hospital in 1922, at which time she complained of frequency of urination, weakness, slight edema of the ankles, poor appetite, constipation, and moderate loss of weight. She had been married twenty-seven years and had had one miscarriage but no children. She appeared ill and had a temperature of 104 degrees, a pulse rate of 100, and respiration 24. The liver was palpable and there was tenderness over the urinary bladder. Urinalysis disclosed "few" to "abundant" pus cells on various occasions, and blood count showed leukocytosis of 10,000 to 11,000. The blood Wassermann reaction was negative. Cystoscopy revealed slight cystitis and impairment of function of the left kidney. The fever gradually subsided, and the patient was discharged from the hospital.

Her second admission was on November 12, 1936, when she was 75 years of age, and her chief complaint was hemoptysis. She had had generalized weakness and dyspnea for three years; for one year she had had chronic cough, frequently productive of bloodstained sputum and on several occasions frank hemorrhage. Hemoptysis had increased nine days previous to admission, and two or three moderately severe hemorrhages had occurred. According to her niece, the patient had coughed up three "basins full" of blood about six hours before admission to the hospital. She continued to complain of poor appetite, constipation, loss of weight for four or five years, dysuria, and frequency of urination.

The temperature was 98.6 degrees, the pulse rate 92, and respiration 22, with a blood pressure of 146 systolic and 70 diastolic. The patient was propped up in bed and coughed up a moderate amount of blood and mucus. She was somewhat deaf. Wasting of the pectoral muscles and an inspiratory lag on the right side were observed. Percussion note was diminished on the right from the mid-axillary line posteriorly, below the level of the seventh thoracic vertebra, and over the left apex. Rales were present at the left apex and both bases.

Laboratory studies included urinalysis which was negative except for albumin, grade I. Blood count showed 70 per cent hemoglobin (Sahli), 3,860,000 erythrocytes, and 14,800 leukocytes with normal differential count. The non-protein nitrogen content of the blood was 37 mg. per cent; estimation of the blood sugar was 94, cholesterol 134, and total protein 5.8 mg. per cent with albumin 3.4 and globulin 2.4. The Kline test was negative.

Roentgenogram of the thorax revealed density in the middle and lower portions of the right lung, suggestive of bronchogenic carcinoma, and an old tuberculous lesion in the left apex. A compression fracture of the eighth dorsal vertebra with slight rarefaction was also noted, which was interpreted as being due to metastatic carcinoma, but from the niece we learned that the patient had fallen and injured her back thirteen years previously. She continued to have cough with expectoration of a small amount of bright red blood until on November 15, 1936, when she had a sudden, massive, pulmonary hemorrhage and expired.

Autopsy—On the surface of the right lung were

many old fibrous pleural adhesions. The cut surface of the upper lobe was reddish-gray in color, and there were several dark red areas of hemorrhage up to 2 cm. in diameter with margins merging into the surrounding parenchyma. In the middle lobe were large caseous masses of yellow friable material with the central portions containing sanguino-purulent material, and with grayish-yellow peripheral portions of rubber-like consistency in which there was a moderate amount of anthracotic pigment. Dense grayish-white retracting bands enclosed the entire lobe. The right middle lobe bronchus was filled with sanguino-purulent material, and there was a fistula between the bronchus and an adjacent artery. The bronchial walls in the entire lobe were clearly delineated, and the mucous membrane was not appreciably infiltrated. Cut section of the lower lobe was reddish-gray in color. Many nodules up to 2 mm. in diameter were scattered about, especially in the lower portion along the periphery; they were grayish in color, firm in consistency, and slightly raised above the surrounding surface. The lower lobe bronchi were filled with blood, and the walls and mucous membrane were thickened. The hilar lymphatic nodes were enlarged, of firm consistency, very dark in color, and friable.

The left lung was reddish-gray with black mottling, especially at the apex, and there were numerous fibrous adhesions and much scarring. The upper lobe was moderately contracted, deeply pigmented, and firm in consistency. The bronchi were moderately dilated and thick-walled and contained yellow mucopurulent material. In the lower portion of the upper lobe there were six nodules varying in size from 1 to 2 cm., grayish in color with some anthracosis and a firm, homogeneous, rubber-like consistency. In the lower lobe were three nodules., 0.6 cm. in diameter, well circumscribed, firm, and yellowish-gray in color with anthracotic pigment around the periphery (Fig. 1a).

Microscopic Examination—The majority of the sections showed frequent confluent areas of necrosis in which the outlines of the architecture of the parenchymal structures were preserved (Fig. 1b). Faint alveolar outlines were seen, and the walls of the vessels could be identified, especially by elastic tissue stain. Within parts of the necrotic zones were nuclear fragments, dense, round-cell infiltrations, and fibrous tissue proliferation. The elastic fibers were preserved in all structures. In other areas the vessels were preserved and engorged, and some contained hyalin thrombi. The necrotic zones were surrounded by non-necrotic granulation tissue, much of which consisted of fibroblasts, inflammatory cells with a predominance of lymphocytes, and multiple nodular foci made up of epithelioid and giant cells, indistinguishable from tubercles.

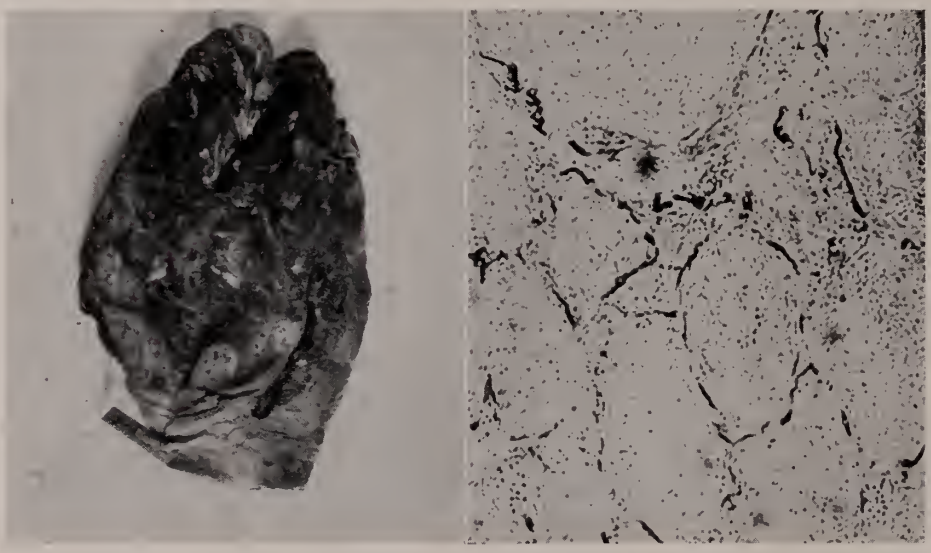

Fig. 1a.—Photograph of gross specimen.

b.—Photomicrograph, elastic tissue stain; shadowy outlines of alveolar structures remaining in area of necrosis.

Fibrous connective tissue surrounded the tubercles. Peripheral to them there was diffuse fibrosis and organizing pneumonia of non-specific type, with interstitial infiltrations in the remainder of the lung tissue in the affected portions. The lumina of many small arteries and veins were either occluded or greatly diminished in size by infiltration in their walls of lymphocytes, plasma cells, and granulation tissue.

Other pathologic findings in this case were atherosclerosis and calcification of the aorta, arteriosclerosis, and scarring of the kidneys. Tubercle bacilli were not demonstrated in the lesions by accepted staining technic.

Case 2. There is no clinical record of this patient, a 54-year-old colored man. The lesions in the lung were discovered at autopsy which was ordered by the coroner, and other findings were a massive, cerebral hemorrhage into the left basal ganglion, malignant nephrosclerosis, cardiac hypertrophy, arteriosclerosis, and syphilitic myocarditis (miliary gummata).

Autopsy—The lungs externally appeared normal except for the lower lobe on the left side. On its surface were several, medium-sized, retracted areas and multiple nodules of varying size with a firm, elastic consistency. On section there were many nodules with irregular edges, slightly raised above the surrounding parenchyma, and with a firm, rubbery consistency generally, although the centers were less firm than the outer portions. The margins were a pale, reddish-gray color, with darker centers. The largest of these nodules, measuring 4.5 x 3.0 cm., was adjacent to a bronchus, and beyond its location the bronchus was markedly dilated. The walls of the bronchi near other of these foci were moderately thickened with the mucous membrane intact. Smaller nodules were distributed along the courses of dilated bronchi, extending to the periphery of the lobes, but not directly involving the pleura. Hilar structures were normal (Fig. 2a).

Microscopic Examination—There was diffuse, infiltrating, granulation tissue which occupied the lumina of alveoli and walls of alveoli, arteries, veins, bronchi, and bronchioles, as well as an occasional lumen of a blood vessel or bronchiole. There was diffuse, round-cell infiltration of the interstitial tissue surrounding the areas where granulation tissue was present; most of the round cells were lymphocytes, but plasma cells were also abundant (Fig. 2b). The granulation tissue and the round-cell infiltration in most places occurred together; in other areas there was gradual transition from one to the other. The granulation tissue was composed of irregularly arranged fibroblasts, epithelioid cells, and numerous multinucleated giant cells, round cells, and capillaries which were often filled with red blood cells. The essential architectural outlines of the original structures, such as alveolar walls, vessels, bronchi, and bronchioles were preserved throughout

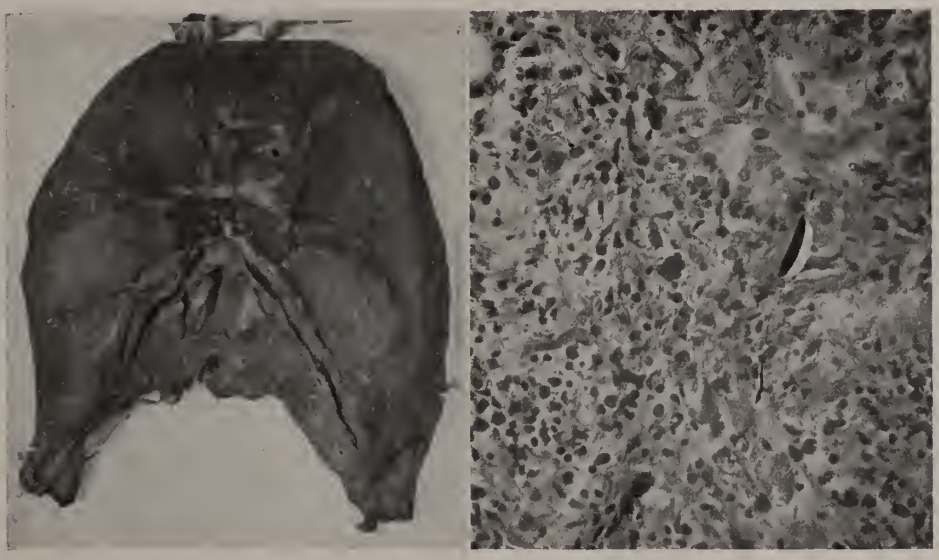

Fig. 2a.—Photograph of gross specimen.

b. — Photomicrograph, granulation tissue, small round— and plasma cells in alveoli.

all areas where granulation tissue or interstitial infiltration was present, even in the small areas of necrosis in the granulation tissue. This fact was demonstrated clearly by elastic tissue stain. The elastic lamellae and muscle fibers of arteries, but more especially of veins, were separated by granulation tissue which partially destroyed and interrupted continuity of the elastic fibers. Occasionally the lumen itself was invaded and partially or completely occluded by granulation tissue, but more frequently the lumen was narrowed by infiltration of the wall. Round cells and multinucleated giant cells were numerous in the walls, and proliferative intimal change was occasionally seen. A similar type of infiltration was found in bronchial and bronchiolar walls.

ish-gray, shiny exudate and debris. The wall appeared to be made up of infiltrated, grayish, lung parenchyma, and the cavity communicated with a bronchus. Adjacent to the cavity were many irregular, opaque, nodular areas, dull gray in color. They were fairly well circumscribed and surrounded by a zone of anthracotic pigment. Bronchial walls and mucous membrane were normal, and yellowish-gray exudate was present in the lumina. Scattered throughout the lower lobe of the left lung were numerous nodular areas of infiltration. There was no calcification of any of the nodules, nor were there any small cavities.

Microscopic Examination—Large areas of necrosis, irregular in size and shape, were noted, in which the architecture of the alveoli was preserved.

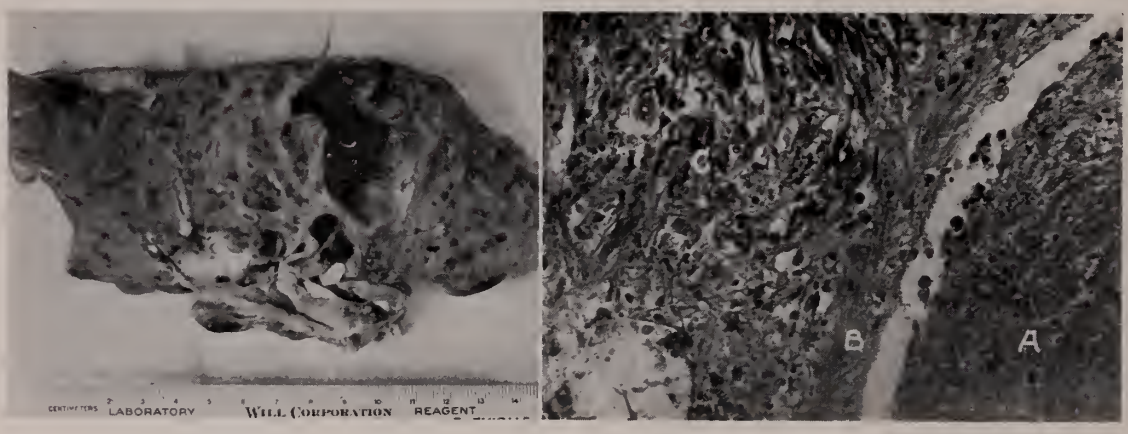

Fig. 3a.—Photograph of gross specimen.

b.—Photomicrograph, wall of blood vessel involved by granulation tissue and inflammatory reaction; thrombus in blood vessel; A-thrombus, B-blood vessel wall, C-granulation tissue.

Case 3. There is no clinical record of this patient, a colored woman, 30 years of age, whose autopsy was ordered by the coroner. In addition to lesions in the lungs, the findings included syphilitic aortitis with superimposed verrucous endocarditis, narrowing of the orifices of the coronary arteries, diffuse myocardial scarring, focal interstitial infiltration of the kidneys, and anemic infarct of the left kidney.

Autopsy—The left lung appeared to be irregularly consolidated throughout and covered with fibrinous exudate. On sectioning the lung, a cavity 8 cm. in diameter was found in the anterolateral portion of the upper lobe (Fig. 3a). This cavity was separated from the pleural cavity by a zone of firm, gray tissue, 0.5 cm. in thickness. Its inner surface was ragged and covered with yellow-

The alveoli in these areas were filled with pinkish, fibrillary and granular debris and many nuclear fragments. Peripherally to them was granulation tissue made up of fibroblasts, some of which radiated outward from the center of the necrotic areas in palisade formation, with infiltration of small round cells. Numerous smaller areas of necrosis were present, either isolated or near large necrotic areas. They had a central necrotic zone in which the outline of the alveolar walls was preserved, with partially necrosed granulation tissue in the alveoli. These zones were surrounded by epithelioid cells, and multinucleated giant cells were frequent. Throughout the sections the alveolar walls were diffusely involved. Between the capillaries and the alveolar basement membrane there was dense infiltration of round and plasma cells, lymphocytes,

large mononuclear and occasionally polymorphonuclear cells, as well as some fibroblastic or granulation tissue. The lumina of the alveoli were often filled with finely granular precipitated material, large foamy mononuclear cells and polymorphonuclears, or organizing pneumonia, non-specific in character except for occasional multinucleated giant cells. Much carbon pigment was present. Foci of necrosis often encroached upon bronchial walls. Larger bronchi were filled with debris, apparently from the necrotic processes. Vascular lesions were prominent (Fig. 3b). There was proliferation of the loosely arranged and edematous subendothelial elements, in which fibroblasts made a network so that the endothelium was elevated, and the lumina of the vessels were narrowed. There was also dense infiltration by plasma cells and lymphocytes, much less frequently in the media than in the adventitia.

COMMENT

Certain distinctive pathologic features were noted in each of the three cases. In the presence of severe involvement of large areas, the process did not spread to other areas of the lungs, as would be expected in tuberculosis, the condition from which it is most difficult to differentiate syphilis of the lung. The affected portions of the lungs had a rubbery, elastic consistency and calcification was absent. Distinctive histologic features were peculiar destruction of parenchymal tissue in which outlines of architecture were preserved (especially elastic fibers), granulation tissue at the periphery of the zones of necrosis in which fibroblasts were in palisade arrangement, giant cells, and marked infiltration of the walls of blood vessels and bronchi. Absence of tubercles in the lung tissue surrounding the destroyed areas was additional evidence against tuberculosis. Gummata were present in the myocardium in *Case 2*. Negative blood Wassermann reaction, as in *Case 1*, has been noted previously in cases of syphilis of the lungs.[3]

SUMMARY

Three cases are presented which appear to meet the criteria for syphilis of the lung.

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EMPYEMA IN THE NEWBORN—
A Case Report

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The purpose of this report is to place on record an unusual case which was seen at the University of Virginia Hospital. This is a case of bilateral empyema which was present at birth and confirmed by post-mortem examination. In a partial review of the medical literature and textbooks no similar case was encountered.

Case No. 133230: This newborn infant was admitted to the University of Virginia Hospital by birth. The pregnancy history of the mother was negative except for the slightest degree of nausea and vomiting in the first trimester. Two days before this patient went into labor her membranes spontaneously ruptured. The mother was admitted to this Hospital in good labor with the cervix being about three fingers dilated. She was delivered after a sixteen-hour labor of a living male child. The baby was in poor condition after birth, requiring vigorous resuscitative measures for about fifteen or twenty minutes. On admission to the nursery the child was still in poor condition, his temperature being 99.8° and his respirations were fast and shallow. There was an expiratory grunt present.

Physical examination on admission revealed a slightly cyanotic infant weighing 2780 grams with fast grunting respirations and looking in poor condition. There was slight over-riding of the cranial

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bones but the fontanel felt normal. Reflexes were all hypo-active. Examination of the chest could not be done satisfactorily because of the very poor condition of the patient. However, respirations were short and rather distant with many rhonchi heard throughout both sides of the chest. There was slight decrease in percussion resonance in both sides of the chest posteriorly and laterally but more marked on the left side. The heart was fast and irregular but the sounds were strong.

The patient was put in constant oxygen and food and fluid were withheld for about twenty hours at which time water was given by gavage. The patient vomited everything taken by mouth and his temperature during this time ranged from 98 to 105.2. His condition gradually became weaker and he died twenty-six hours after birth.

Post-mortem examination was performed and the findings were as follows:

Body: The body was that of a newborn white male, 48 cm. in length. There were no congenital abnormalities or defects. The nose was normal and presented no abnormalities. No teeth were present and the gums and tongue were unremarkable. The neck and thorax were symmetrical and well developed. The umbilical stump was about 1.5 cm. long and dry, was ligated in two places. The external genitalia was normal and the testicles were descended. The extremities were well formed, and no palpable lymph glands were present.

On opening the abdomen there was a small amount of fluid in the peritoneal cavity which was clear straw colored. The surfaces were smooth and glistening. The intestines were not distended and lay together with the other viscera in their normal relation. The liver was enlarged, right lobe extending down below the costal margin 4 cm. in anterior axillary line.

On opening the thorax, the thymus extended down to almost the pericardial sac from the neck and measured 3 x 2.5 x 1.5 cm., and weighed 5 grams, was distinctly lobulated and resembled a piece of whitish fat. In each pleural cavity there was about 5 to 7 cc. of thin purulent yellow fluid. The pleura had lost its shiny appearance and was rather dull; stretching from the lung to the chest wall were thin hair-like strands of whitish fibrin. The lungs appeared dark red color and seemed only partly expanded. Cultures of the fluid were taken. The pericardial sac contained no fluid and its surfaces smooth and shining.

Heart: Normal.

Aorta: Normal.

Lungs: Left weighed 30 gm. and right 40 gm. Both lungs were dark red in color and were not as well aerated as normal. The pleural surface of upper left lobe had a thin deposit of yellowish fibrin which was more marked on the anterior surface, and between the upper and lower lobes there was a much thicker deposit of fibrin. On section of the lung, there seemed to be areas of consolidation, especially in the lower lobe, although nothing definite could be made out. The tissue was dark red and very firm. The right lung also contained a thin deposit of fibrin on its pleural surface, although it was not as thick as on the left. On section it resembled the left with the parenchyma deep reddish with scattered areas of what appeared to be consolidation. This was questionable, however.

Trachea: Normal.
Adrenals: Normal.
Kidneys: Normal.
Ureters and Bladder: Normal.
Liver: Normal.
Gall Bladder: Normal.
Gastro-Intestinal Tract: Normal.
Spleen: Normal.
Pancreas: Normal.
Brain and Spinal Cord: Not done.
Microscopic—

Heart: No changes noted.

Aorta: No changes noted.

Lung: Marked confluent lobular pneumonia. Marked engorgement of pulmonary vessels. On the pleura is an acute fibrinous exudate with many polymorphs present. The parietal pleura shows marked reaction with fibrin-polymorphs in the exudate.

Liver: Marked cloudy swelling. Extra-medullary blood formation was widespread.

Gall Bladder: Partial autolysis of mucosa.

Pancreas: No changes noted.

Spleen: The pulp contains much blood. The malpighian bodies have active germinal centers, slight extra meduallary blood formation.

Adrenals: No changes other than post-mortem, noted.

Kidneys: Cloudy swelling of the tubules. Small hemorrhage in pelvis of the right kidney.

G. I. Tract: Cardia and pylorus showed no changes. Gastric mucosa is normal in appearance.

Bacteriology: The specimen of fluid taken from both pleural cavities was cultured and contained Type I pneumonococci.

Comment: It is unfortunate that intrauterine and vaginal cultures were not obtained on the mother of this patient. However, except for the history of spontaneous rupture of the membranes two days prior to delivery, the pregnancy, labor, and post-partum course were normal. The highest fever the mother had was 100.2° on the second post-partum day.

The fact that fibrin and organization of exudate

were present on post-mortem examination, twenty-six hours after birth, is indicative of an intra-uterine pneumonia.

Summary: A case of bilateral empyema present at birth is reported with complete post-mortem findings.

TREATMENT OF PERIPHERAL VASCULAR DISEASE*

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The differential diagnosis of peripheral vascular disease is not difficult and was fully outlined by several essayists during the past year. Therefore, my discussion tonight will apply chiefly to our present concepts of therapy in the most important occlusive vascular diseases, such as arteriosclerosis obliterans and thrombo-angiitis obliterans.

The trend toward conservatism in handling these diseases is evident in the closer cooperation between the internist and the surgeon. It is obvious that at times a conservative attitude must be abandoned in favor of radical surgery, especially in the presence of gangrene, with ascending infection and toxicity. Recently Allen[1] has advised freezing of the affected limb as a pre-operative measure, and Meleney[2] has had success in limiting the spread of infection, especially in the presence of anaerobic organisms, by the application of zinc peroxide paste.

There are several mechanical devices on the market that are being extensively used in the treatment of occlusive peripheral vascular disease. The paevex boot is a glass boot connected to a motor-driven apparatus, by which an inclosed limb may be subjected to alternate suction and pressure. Usually the suction is at a negative pressure of 80 and a positive pressure of 20. The cycle is 10 seconds for negative and 5 seconds for positive pressure. The extremities may be kept in these boots for several hours. The object is to stimulate the flow of blood into and from the extremities. Naturally, if the involved area is above the level of the cuff of the boot, good results will not be obtained. The boot should never be used in the presence of an acute or subacute inflammatory process. During the past five years we have followed many cases treated in the boot and most of our success has been in cases of frost-bite and an occasional acute embolism or arteriosclerosis.

"Reactive hyperemia" is a well known phenomenon. Many years ago Bier[3] studied this reaction and developed therapeutic procedures based on the principle that obstruction and then release of the circulation would produce a marked circulatory increase and that this would be beneficial in certain pathological states. Lewis and Grant[4] published instructive studies of this condition as it occurs, both after arterial and venous obstruction, with release of the obstruction. It seems that when you obstruct the circulation to a part, and then release the obstruction, there is a bright flush of the skin. Many theories have been advanced to explain this hyperemia, but the exact mechanism by which it takes place has been difficult to determine and apparently it involves many complex extracellular and intracellular chemical problems. Collins and Wilensky[5] have recently re-emphasized the principles expressed by Bier in 1905, and have developed an "intermittent venous hyperemia machine", which is capable of reproducing a cycle of obstruction and release by means of cuffs applied to the extremities. A cycle of two minute obstruction with one minute release at a pressure of 25 to 80 mm. of mercury has been recommended. The inventors of this apparatus are very enthusiastic, but critical observers, such as Wright,[6] Veal and McCord,[7] Allen and McKechnie,[8] have not obtained the expected results.

The vas-oscillating bed of Sanders is a motorized oscillating bed which has been used in a number of clinics. By means of this bed the head and feet of the patient are alternately elevated and lowered, a complete cycle taking from one to three minutes. This procedure may be continued indefinitely, even through the sleeping hours. The degree of tilting and the speed of the cycle can be regulated within reasonable limits. The object is to exercise the arteries which are still able to function, as with the Buerger exercises, but continuously and without fatigue to the patient. There are no constricting bands and the process appears theoretically sound. The

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*Presented at October, 1941, Staff Meeting of the Medical College of Virginia.

only disadvantage is that the bed costs about three hundred dollars and therefore is out of reach of the average patient in his home or a hospital with limited funds. It would seem that this apparatus is fundamentally sound and should be widely accepted as an adjunct in the treatment of peripheral vascular disease.

There are many other therapeutic methods not requiring any mechanical apparatus. Prophylactic care of the extremities is extremely important. Constant cleansing, immediate attention to minor abrasions, proper wearing apparel, are all very essential. Although the controversy still rages as to whether tobacco is a causative factor in thrombo-angiitis obliterans, most clinicians agree that tobacco in any form is harmful to individuals suffering from peripheral vascular disease. Although spasm of the sclerotic vessels is not considered important, it must be remembered that the life of tissues frequently depends on the collateral vessels; these are usually not sclerotic and may be constricted by the use of tobacco. Therefore, patients with definitely impaired circulation from peripheral vascular disease should completely abstain from the use of tobacco.

The action of alcohol on the peripheral vascular tree is definitely vasodilating. The ingestion of one to one and one-half ounces of whiskey has been shown by experiments to increase the temperature of the extremities nine to twelve degrees Fahrenheit, depending in part on the condition of the vessels and the control of the temperature prior to the experiments (Wright[6]). So, there is general agreement in most of the peripheral vascular clinics that alcohol is an ideal drug in the treatment of these occlusive diseases. Obviously one must be careful of its use in the presence of severe diabetes or liver damage. Besides its vasodilating action, alcohol also has a narcotizing influence which may control the pain at times better than morphine. We advise one to one and one-half ounces of whiskey three times a day to the majority of our bed patients.

The problem of heat in the treatment of peripheral vascular disease is of great importance and it is felt that, in the past, many cases with advanced disease have been done more harm than good by improper heat applications. Controlled, continuous, hot, wet soaks are of great value when an open infected lesion is present, but unfortunately the wet dressings are applied too hot and very soon become cold even with constant changing of the dressings. If the dressings do become cold, the circulation, which is already impaired, is even lessened rather than increased. Temperature controlled soaks, by the use of thermostatic devices, would be ideal, but these devices are not usually found in the average hospital. Our procedure is to order warm soaks to the affected limb for a period of fifteen minutes, three or four times a day, following which the limb is dried and wrapped in heavy wads of cotton. In addition, a heat pad is applied to the abdomen for thirty to sixty minutes twice a day, with the idea that reflex heat stimulation will be produced to the lower extremities. If direct heat in the form of a light cradle is used, occasionally gangrenous lesions will spread, as the heat cannot be controlled. We are not in favor of diathermy, short-wave, or infra-red rays, unless they are applied to the trunk to produce reflex vasodilatation.

Many drugs have been used and are being used in the treatment of these disorders. The fact that there are so many indicates that probably only a few have any definite value. We have not been impressed with the results in the use of hypertonic saline solutions, although they are highly advocated by Silbert and Samuels. The use of sodium citrate, Ringer's solution, and insulin have been given up in most of the larger clinics. Of the vasodilating drugs, the current favorite happens to be papaverine hydrochloride; it has been advocated especially in cases of acute embolism or thrombosis, ¼ to ½ gr., intravenously, every four hours. We do not believe that the xanthine derivatives or nitrites have any permanent value. Wright[6] is very enthusiastic with the results obtained by the use of Depropanex; this is a deproteinated pancreatic tissue extract. The mechanism of the action of pancreatic tissue extracts has never been satisfactorily explained. Apparently their antagonistic action to epinephrin has suggested a vasodilating factor. It is also suggested that deposition of cholesterol in experimental animals is markedly retarded by the use of pancreatic tissue extracts. We have had very little experience with these tissue extracts but expect to use them in the future.

This is the era of vitamins, so naturally they have been accepted as being useful in the treatment of peripheral vascular disorders. Several of the vitamin B complex factors are considered of value, the ideal one at present being nicotinic acid in 50 mgm. doses, three times a day. Although subjective symptoms, such as flushing, a sensation of warmth, and

sweating, occur after oral administration of nicotinic acid, no one has demonstrated increase in peripheral blood flow following its use (Spies, Bear, and Stone[9]). Nevertheless, we feel that this preparation must have a vasodilating action and are using it in most of our cases.

Typhoid vaccine is still considered of great value, especially in the treatment of Buerger's disease. It probably is not as satisfactory and not without danger in elderly arteriosclerotics. The action of typhoid vaccine is probably dependent purely on the vasodilatation of the collateral vessels supplying the limb. One must be careful in the use of the vaccine in order to prevent severe reactions. The procedure used is as follows: The first dose is 25,000,000 organisms injected intravenously; injections are given every three days, providing the effect of the preceding dose has completely worn off. The object is to obtain a rise in temperature of two to three degrees without a chill. If 25,000,000 organisms do not cause a reaction, the dose is increased gradually until an effective dose is found. We feel that the use of typhoid vaccine is one of the better methods of treatment, especially in thromboangiitis obliterans.

When there is evidence of marked vasospasm, symptoms have been relieved by procaine and alcohol injections of the lumbar sympathetic nerve trunks. Unfortunately, the injection of alcohol has caused severe neuritis in an occasional case. Some observers feel that, rather than hazard this complication, lumbar sympathectomy should be performed. It would seem logical to discontinue alcohol injections and in a given case of vasospasm to try procaine block first. If the affected limb shows a definite increase in skin temperature with other objective phenomena signifying release of vasospasm, then sympathectomy should be performed. Occasionally a patient may have peripheral vascular occlusion associated with vasospasm and procaine sympathetic blocks may prevent this individual from developing gangrene.

In summary, it is obvious that there are many methods of treating peripheral vascular disorders. We feel that one should not be too dogmatic in praising the efficacy of any single method of treatment. The conservative attitude would be to accept those preparations and methods that have proven successful in the larger clinics, using all of them, if necessary, in an individual case. A cooperative spirit between the nurse, physician, and surgeon, will certainly prevent many of the distressing complications we have seen in peripheral vascular disorders.

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SELECTED CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY VIRGINIA

The patient, a white 37-year-old multipara with five previous pregnancies, was first seen by a physician when eight and one-half months pregnant because there had been some bleeding, although the amount of blood loss was small. As well as one can tell from the information before the committee no diagnosis was made, no treatment instituted, or advice given. Bleeding continued in small amounts at intervals for two weeks, at which time profuse bleeding associated with slight abdominal pain began. A vaginal examination in the home revealed a central placenta previa and the patient was de-

livered immediately by version and extraction. The baby was stillborn. The placenta was expressed without difficulty, and no abnormal postpartum bleeding occurred. The patient died one hour and forty minutes after delivery, apparently from blood loss combined with shock from the delivery.

COMMENT

This case has been classified as a preventable obstetrical death, because of the absence of prenatal care and because of the failure to employ one of the generally approved methods for the treatment of placenta previa. Placenta previa is one of the most serious complications of pregnancy, and unless facilities for its treatment are available in the home, such as transfusions of blood and plasma, they should be referred to hospitals for treatment. It has been well said that the "when" in the treatment of placenta previa is more important that the "how". Placenta previa often gives only slight vaginal bleeding at first, which will later be followed by severe hemorrhage. The time to establish the diagnosis and to institute treatment is at the time of the first bleeding. In the case under consideration two weeks elapsed between the onset of bleeding and the final profuse hemorrhage, two weeks in which the life of the individual could have been saved.

At the time of the first visit the patient should have been referred to a hospital with facilities for the diagnosis and treatment of placenta previa. The diagnosis can be established by x-ray pictures using either a technique for visualization of soft tissue detail or by an x-ray picture with the bladder distended by an opaque material. An appreciable space between the bladder outline and the fetal head is indicative of placenta previa. If x-ray facilities are not available for these procedures, the diagnosis can be established by a sterile vaginal examination. *But* this should only be done when facilities are available for immediate treatment, as the examination itself may start an uncontrollable hemorrhage.

In any event the patient should have been typed and cross matched and blood available before the sterile vaginal examination was done. After the diagnosis is established then a choice must be made between vaginal and abdominal delivery. Each patient should be individualized and the choice of delivery determined with due regard for the condition of the cervix, the presence or absence of labor, the parity of the patient and the size and viability of the child. Many are inclining more and more toward abdominal delivery in placenta previa, particularly in the central varieties, if the child is viable. If delivery is to be accomplished through the vagina, the simplest method to employ is rupture of the membranes if possible and scalp traction. Braxton Hicks version or Voorhees bags may be used as a method of tamponading the lower segment while awaiting cervical dilatation, but in no case should the child be pulled through the cervix until the cervix has dilated sufficiently to permit its passage. Accouchement forcé which was apparently used in the case under consideration, should practically never be employed, especially in the treatment of placenta previa. Fluids, whole blood, and plasma should be administered as indicated, and should always be immediately available before delivery is attempted.

Because of the failure to establish the diagnosis and to institute treatment during the two weeks which elapsed before the fatal hemorrhage, and because of the failure to employ an approved method of treatment it is felt that the case under consideration should be classified as preventable.

Mental Hygiene Activities

The Mental Hygiene Society of Virginia—Its Purpose and Program, Past, Present and Future*

The Mental Hygiene Society of Virginia was formally organized as such on February 19, 1937. For thirty-seven years prior to this, however, Mental Hygiene had played a large part in any Virginia Social Welfare program. This had to be so because it was Dr. William F. Drewry, that incomparable mental hospital administrator and mental hygienist, who played the leading role in founding the original Virginia Conference of Charities and Corrections in 1900, which is now known as the Virginia Conference of Social Work. The ever growing influence of this great psychiatrist continued as a vital, living factor until the year 1934 when he passed away.

The cause of mental hygiene grew to such proportions and assumed such importance in the Virginia Conference until by 1937 it seemed advisable to organize a separate and independent Society. In the early part of 1936 appropriate committees were

*Read before the Social Action Section of the Virginia Conference of Social Work at Richmond, Virginia, April 24, 1942.

appointed to study the whole matter. It was on February 19, 1937, the organization meeting was held, and Dr. Beverley R. Tucker, of Richmond, was elected as its first president.

The Society has continued its cooperation with the Conference of Social Work and the Mental Hygiene Society section has been one of the features of each annual meeting.

The Society was organized for the following purposes:

1. Promoting a general recognition of the true nature and the established causes of mental disease and mental defect.
2. Advancing the methods of treatment and prevention.
3. Rationalizing and humanizing the public attitude towards mental disease and hospitalization.
4. Securing suitable legislation.
5. Working concurrently with Federal, State, Local, and Private agencies in matters relating to mental health.

The Society has never lost sight of these objectives, and slowly but surely, notable advances have been made. Advantage has been taken of every opportunity to preach and teach mental hygiene to the people of Virginia. In addition to the well-attended and helpful meetings each year with the Conference of Social Work, many other public meetings have been held, all of which have proven interesting and instructive. Special mention should be made of those in Danville, Norfolk, Roanoke and Richmond. Others which were outstanding were those held in connection with the American Association for the Advancement of Science in December, 1938, the American Psychiatric Association in May, 1940, and the Institute of Public Affairs at the University of Virginia in July, 1941.

The annual meetings of the Society have been instructive and helpful. In addition to all of this, the individual psychiatrist and others have contributed abundantly of their thought, time and money, in giving talks here and there to small groups of interested people.

The Society has always advocated better organization and more adequate treatment standards in State mental institutions. Much has been accomplished along this line.

It sponsored the cause of establishing psychiatric wards in the two State medical schools and hospitals. This, too, has been fully realized.

The matter of bringing the general public to a better understanding of mental disease and defect and rationalizing their attitudes toward mental institutions has been another major objective. It is believed that in this respect more has been accomplished in the last five years than in the previous fifty.

All of this and much more truly forms the foundation for the future work of the Society. All of this must be continued and to it must be added a few more very important items:

1. Do whatever may be possible towards keeping the mentally unfit out of the armed forces and plan for the rehabilitation of those who will return as mental casualties.
2. Plan for and help organize a comprehensive, community-sponsored, State-supervised system of mental hygiene clinics.
3. Advocate a revision of the commitment laws and procedures so that mental patients may go to State hospitals without being arrested and kept in jail like a criminal.
4. Advocate and urge that psychiatric education and training be more general in schools of medicine, nursing, and the social sciences.

When nearly 12,000 Virginia citizens occupy more than 50 per cent of all the hospital beds in the State and more than 3,000 persons are going to Virginia mental institutions each year, it can be readily understood that the Society is indeed laboring in a field fruited with vast opportunities and possibilities.

At the moment and possibly for the next several years, the services of the Society will be in great demand in the defense and war effort; especially, as it may be able to help in the elimination of the mentally unfit from the armed services and to rehabilitate those who will return as mental casualties. The building of civilian morale will also be of the greatest importance both in war and for the peace which will follow.

The Mental Hygiene Society of Virginia is in existence because physicians, social workers, teachers, preachers, nurses and laymen felt that by the pooling of their resources much could be accomplished toward helping a greater number of people to be healthier and happier in body, mind and spirit.

FRANK H. REDWOOD, M.D.,

President.

Public Health Statistics

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for March, 1942, compared with the same month in 1941 and for the period of January through March, 1942, compared with the same period in 1941 follows:

	MAR. 1942	MAR. 1941	JAN.-MAR. 1942	JAN.-MAR. 1941
Typhoid and Paratyphoid	4	15	42	33
Diarrhea and Dysentery	69	55	293	140
Measles	998	9,797	2,378	13,979
Scarlet Fever	142	228	492	593
Diphtheria	41	49	157	123
Poliomyelitis	1	2	1	6
Meningitis	22	10	53	24
Undulant Fever	5	0	7	3
Rocky Mountain Spotted Fever	0	0	1	1
Tularaemia	4	2	18	15

IMMUNIZATION, A WAR NECESSITY

The responsibility for preventing and controlling disease in the armed forces rests upon the medical services in the respective branches. These men effectively guard the health of the Army, Navy, Marine Corps and Coast Guard.

On the other hand, the private physicians must maintain, and, if possible, increase the health of those not in the armed forces. Disease in the civilian population takes a tremendous toll of physicians' hours and of available hospital beds. Moreover, the prevalence and spread of disease among civilians imposes an added risk upon the personnel of the armed services and upon the industrial workers. Although the men in the latter group are employed in work differing from that ordinarily engaged in, pathogenic bacteria do not play favorites. Indeed, disease appears more frequently in industrial groups of all kinds than among any other class of persons because of the increased exposure.

It is the patriotic duty of physicians to use the practical and proven procedures in immunization against smallpox, diphtheria and typhoid. These three prophylactic measures should be stressed energetically by all practicing physicians as well as by public health officials.

In addition, an increasing volume of experimental and clinical evidence would seem to justify vaccination against whooping cough. While this relatively new immunization procedure, for obvious reasons, has not been incorporated into the public health program, it can very well be added to the routine immunization programs as carried out by pediatricians and private physicians.

Miscellaneous

Blood Collections for Army, Navy Reported at Increasing Rate.

With 30,477 blood donations being reported for the first two weeks in March by Red Cross chapters maintaining donor centers, the program for supplying blood plasma to the armed forces has entered its second year of operation with an excellent start. Inaugurated in February, 1941, at the request of the Surgeons General of the Army and Navy, this project has expanded as rapidly as laboratory facilities to process plasma have become available. Donor centers are now operating in 18 cities.

Shortly after beginning of the project the Red Cross was requested to deliver 215,000 units of plasma by July, 1942. Following Pearl Harbor this figure was upped by 165,000 units, bringing the total number to be delivered by July, 1942, to 380,000. For the year beginning July 1, 1942, the Army and Navy have requested the Red Cross to obtain an additional 550,000 units, making a minimum total of 930,000 units. To provide this total will require somewhat in excess of 1,000,000 donors, it is estimated.

According to a report covering the first year of operation issued by Dr. G. Canby Robinson, national director of the Red Cross Blood Donor Service, by the end of November, 1941, the Red Cross blood donor centers then participating in the program had collected and delivered to processing laboratories a total of 27,352 donations. Then came Pearl Harbor and the opening of additional donor centers. Immediately after, enrollment of donors jumped by leaps and bounds. Whereas in the ten prior months 27,000 blood donations had been given, the number of donations during December was 18,396! In January this figure was doubled, 37,109 donations being made. Collections in February, the shortest month in the year, totaled 53,780, and with the first two weeks in March reporting at a monthly rate of approximately 65,000, there is every prospect that the goals that have been set will be reached. However, the present rate of donations will have to be

maintained without let-up, and may even have to be increased further, as there is the probability that additional amounts will be requested by the Army and Navy.

Red Cross blood donor centers are now in operation in the following cities: New York, Philadelphia, Baltimore, Buffalo, Rochester, N. Y., Indianapolis, Detroit, Pittsburgh, St. Louis, Boston, Milwaukee, Cleveland, Chicago, San Francisco, Los Angeles, Cincinnati, Washington, D. C., and Brooklyn.

According to the report seven commercial laboratories have contracts with the Government for processing plasma on a cost basis. The total number of donations during the first year of operations aggregated 82,857, of which 55,505 were made in the nine weeks of December and January.

The value of blood plasma in the treatment of burns and wounds and in combating shock was amply demonstrated at Pearl Harbor. Surgeons on duty there during the attack and in the days following, state in no uncertain terms that many lives were saved due to the use of plasma supplied to the armed forces by the local medical society, the American Red Cross and other agencies.

Woman's Auxiliary
to the
Medical Society of Virginia

President—MRS. E. LATANE FLANAGAN, Richmond.
President-Elect—MRS. H. W. ROGERS, Norfolk.
Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.
Corresponding Secretary—MRS. A. S. LILLY, Richmond.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

The National Meeting.

Last Call for reservations for the Twentieth Annual Convention of the Woman's Auxiliary to the American Medical Association, which will be held at Haddon Hall, Atlantic City, New Jersey, June 8-12.

Atlantic City extends a hearty welcome to you!

The Williamsburg-James City Auxiliary

Met at the home of Mrs. T. Brantley Henderson on March 3rd. Mrs. E. T. Terrell, president, presided. There were present ten members and one visitor, Dr. Eleanor H. Beamer, of the staff of the Eastern State Hospital.

The treasurer, Mrs. B. I. Bell, was requested to send our annual contribution to the Jane Todd Crawford and the State Maintenance funds.

A letter was read from our State Exhibit Chairman and an exhibit for the A.M.A. meeting at Atlantic City, June 8-12, was discussed.

A quiz on our new program material, "Be Informed", was conducted by our president, Mrs. Terrell.

We hope to have our State President, Mrs. Flanagan, with us at our May meeting and plans for her visit and entertainment were made.

Attention was called to the spring issue of "The Bulletin" and the secretary read the President's message on National Defense from same.

We make an effort each time to have the wives of the Medical Officers at Fort Eustis meet with us. Three were present at this meeting.

Refreshments were served during the social hour. The next meeting will be held in May.

M. HENDERSON,
(MRS. T. BRANTLEY HENDERSON)
Secretary.

The Warwick County Auxiliary

Entertained the State President, Mrs. E. L. Flanagan of Richmond, at luncheon at the James River Country Club, on March 23rd. The guest of honor spoke on "The Doctor's Wife in War Time". The newly elected president, Mrs. Guy C. Amory of Hilton Village, presided. Other officers of the Auxiliary are: Vice-president, Mrs. E. Greenspon; recording secretary, Mrs. E. W. Buckingham; treasurer, Mrs. Murray Dick. All of these are of Newport News. The President appointed the following as committee chairmen for the coming year: Pre-Natal, Mrs. Fred N. Thompson; Membership, Mrs. T. C. Lawford; Linen, Mrs. W. R. Payne; Program, Mrs. C. E. Holderby, Hygeia, Mrs. Russell Buxton; corresponding secretary, Mrs. J. W. Tankard; historian, Mrs. H. W. Potter; and publicity, Mrs. Paul Hogg.

Norfolk Auxiliary.

Mrs. Flanagan, the State President, also spoke before this Auxiliary at its annual Doctors' Day celebration, March the 24th. This, too, was a luncheon meeting and was held at Ames and Brownley's, a feature of the luncheon being a fashion show, with

Mrs. Mallory Andrews, Mrs. Lemuel Mayo, Mrs. Brock Jones, and the young daughter of Dr. and Mrs. C. M. McCoy, as models. Mrs. Walter P. Adams, president, presided at the meeting, at which Mrs. R. H. Peake read "The Doctor", and made the presentation of the Auxiliary's annual gift of a year's subscription to the *Annals of Surgery* to the Norfolk County Medical Society. This was accepted on behalf of that organization by its secretary, Dr. Lockburn B. Scott. Mrs. Flanagan then gave an interesting talk on the work and aims of the State Auxiliary.

Chairman for Roanoke Meeting.

Those who plan to attend the State Auxiliary meeting in Roanoke, at the time of the Medical Society meeting, October 5-7, will be interested in knowing that Mrs. Mortimer H. Williams has accepted the chairmanship for the ladies' activities at that time.

Book Announcements

Synopsis of the Preparation and Aftercare of Surgical Patients. By HUGH C. ILGENFRITZ, A.B. M.D., Instructor in Surgery, Louisiana State University School of Medicine. And RAWLEY M. PENICK, Jr., Ph.B., M.D., F.A.C.S., Professor of Clinical Surgery, Louisiana State University School of Medicine. With foreword by Urban Maes, M.D., D.Sc., F.A.C.S., Professor of Surgery and Director of the Department, Louisiana State University School of Medicine. St. Louis. The C. V. Mosby Company. 1941. 532 pages. Cloth.

The authors of this text state, in its preface, that it is intended as a summary of the most useful knowledge in surgery which we have at this time, and this, precisely, is what the volume is.

The book deals chiefly with the preoperative and postoperative care of surgical patients, but it contains so much more information than that implied by its title that it is recommended as a most valuable guide to both the student and the practicing surgeon. The pathogenesis of the various complications is briefly but fully outlined, and the physiologic basis for the therapy of each is discussed. There is a good deal of relatively new work presented in some detail and the authors include many of the measures which are used in other clinics and by other surgeons.

The chapters dealing with Shock, and Fluid and Electrolyte Balance, respectively, are particularly noteworthy both for their completeness and for the orderly presentation of their contents. The entire book is marked by this orderly manner of organization, and is as easy to read as it is informative. The volume is very generously illustrated.

H. I. NEMUTH, M.D.

The Minds and Nerves of Soldiers. By EDWARD L. HANES, M.D. The Login Press, 1941. pp 221. Cloth. Price $3.00.

This book is an interesting account of the experiences of a psychiatrist attached to our army in the last war. The author started his services by examining newly inducted officers at Plattsburg and at the end of the war was Chief Consultant on the Headquarters Staff of the American Expeditionary Force in France.

His account of the induction examinations is extremely interesting and he discusses in some detail the types of problems encountered in this work. The problems which he describes are essentially the same as those that we are encountering at the present time and anyone who has engaged in induction examinations during this war would undoubtedly be interested in this section of the book.

That portion of the book which deals with problems encountered in France was also very interesting to the reviewer and served to point out very clearly the importance of screening out as many as possible of the psychiatrically unfit before entering the army. It was apparent that a very high percentage of psychiatric casualties in the last war occurred among individuals who were already making a poor adjustment to civil life and who were unable to adjust to new and strange surroundings and the loss of personal independence encountered in the army.

There is also a description of some methods of treatment used in the hospitals in France. This treatment was primarily symptomatic in nature and was designed to produce a quick return to duty rather than to bring about a complete adjustment of the personality. It is unfortunate that the author was not able to follow up a sufficient number of cases treated in this way to find out what ultimately happened to them.

On the whole the book affords very interesting reading and should be of some value to the psychiatrist or to any physician interested in military medicine.

P. H. DREWRY, JR., M.D.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, $2.00. Single Copies 25c.

VOL. 69. MAY, 1942. No. 5

Editorials

Oil

THERE seems to be a good deal of evidence to show that the regular ingestion of large doses of mineral oil by human beings is capable of depleting their Vitamin A reserve and of provoking in them symptoms of vitamin deficiency. Our guest editorial is a summary of the experimental and clinical facts available to date, and suggests the possible harmful results of continued mineral oil therapy. Dr. Arthur C. Curtis proposes a method of combating the danger, always giving cod liver oil with mineral oil. It occurs to us that it would be simpler if all mineral oil put on the market to be used for medicinal purposes were fortified to the point of saturation at body temperature with Vitamin A. It would then be incapable of robbing the body of Vitamin A and should therefore be innocuous. Manufacturers please take note.

Medicine and the Ministry

MEDICINE and religion have met at the bedside of the sick and the dying since the dawn of civilization. The history of medicine takes us back to the time when the priest and the medicine man were one. The priestly medicine of Egypt, the temple medicine of Greece, the monastic medicine of the Middle Ages, books on medical practice written for popular use by ministers like John Wesley, the great English Divine, bear testimony to the past intimate relations of these two professions.

When medicine became a science with a body of learning too extensive, too specialized and too profound, necessitating techniques and gadgets too complicated for a churchman to combine with his own studies equally extensive, specialized and profound and with his own techniques and duties equally complicated, the two groups parted company. Since that time the breach has been widened by those who were unlearned enough to state dogmatically that science and religion were incompatible.

Has this separation of the two professions gone too far? Is there reason in the efforts to bring them together again? Have they contributions which may prove mutually

helpful? Many so believe. The late Dr. Ben Rosebro of Richmond, for instance, and the group of doctors and ministers he was able to influence thought so, and made a serious attempt at a cooperative movement in the interest of the sick. The Union Theological Seminary of Richmond thinks so and is attempting to include in its curriculum enough medical knowledge to make the minister a more effective visitant to the sickroom and a more understanding caller at the hospital. Certain it is that these two professions, both seeking to function for the good of mankind, should never overlook an opportunity for better understanding and collaboration.

Just how far a minister should enter the domain of medicine is a pertinent question. Psychology he must know, but not psychiatry. It should be forcefully explained to ministerial students that, in spite of notable examples to the contrary, those persons who have attempted to conduct confessionals, even though they were medical men seeking therapeutic effects through mental catharsis, are treading on treacherous ground. Here most of all a little learning is a dangerous thing. Morbid curiosity, particularly in matters relating to sex, often motivates the explorers of the secret sanctuary of disturbed men and women, and sometimes the questioner becomes more psychopathic than the questioned.

What can doctors tell the future "Sky Pilots" that will be helpful to them at the bedside and in their contacts with the sick and the dying? They would like, no doubt, to warn them about the unwisdom of quoting a doctor, of passing on to a parishioner remedies the minister himself has acquired faith in, of criticizing those who are in charge of the sick or of yielding to the temptation to brandish medical terminology.

The tactful young minister will not need to be told that the sick are easily fatigued and that visits should be brief, that a look may betray the gravity of a condition not appreciated by the sufferer, and that the visitor's mood must be neither too serious nor too gay. He will speak quietly but not in sepulchral tones. A visiting card left daily often serves a better purpose than an hour of emotional or over serious conversation. A little book of devotions left to be taken in broken doses is better medicine than a long sermon administered in a heroic dose.

The sensible minister will have no patience with bacteriophobia. He cannot be a coward where duty calls. Fortunately modern medicine has wiped out many of the epidemics that used to test his courage in serving his flock. To be careless of contagion where it exists would be foolhardy and not befitting a learned profession. To carry a sore throat or a cold into the sick room is an offense which should be rebuked. Germs can abide very comfortably in a consecrated throat. A resolution to remain at a safe distance when in the presence of the sick is praiseworthy. To wash the hands after leaving the room is good practice, but ministers like surgeons can learn not to touch. Germs are not broad jumpers.

Ministers are often summoned to the death bed, to read Holy Scripture, to pray and to talk comfortingly to the dying. Such errands of mercy are often more for the good of the surviving than of the dying, for it may be recalled that 90 per cent of those who die from illness (as opposed to those who die suddenly) are unconscious or delirious. Dying words are rarely uttered. When heard, they are usually the mutterings of the semi-conscious.

When doctors themselves are better men they will know more of the spiritual requirements of their patients and will be quick to recognize that the clergy can contribute enormously to their recovery. Even now they are convinced that too infrequently the sick and the dying receive the benefit of the clergy. Ways should be opened by which the wishes of such patients could be accurately determined and

quickly satisfied. Relatives and hospitals need to learn more about the religious needs of the sick. Studies should be instituted and means found whereby the offices of the church may be made easily available to the seriously ill who are often too fearful, too reticent, too weak to request the visit of a minister, but who would welcome the comfort of the church if it were tactfully offered.

Many of the great hospitals of our country have been founded by religious organizations. More frequently they need their sponsorship. Perhaps as America turns from her crass materialism to a consciousness of her spiritual needs, hospitals will have their chaplains as regularly as do our military organizations. Souls are ushered into eternity from both.

What Does the Future Hold?

IN 1141 B.C. the Philistines defeated the Israelites and took the ark of the Lord to Ashdod, Gath and Ekron. The ark was infected with bubonic mice and a great and destructive epidemic of plague swept with terrifying fury through all the cities of Philistia.

At the siege of Naples in 1495 the French invaders contracted from the Spanish occupants of the town a disease now known as syphilis, said to have been introduced by the sailors of Columbus, a gift of the New World to the Old.

Cortez and the Spanish Conquistadors in 1520 carried smallpox with decimating effect to the inhabitants of Mexico. First settlers in North America brought tuberculosis to the Indians. Traders in the far North carried measles with fatal result to the Eskimos. Recently a new and virulent form of malaria appeared in Brazil, brought there in airplanes from the interior of Africa.

History has again ample opportunity to repeat itself. What new and strange diseases await us with the return of our expeditionary forces from the tropical countries? Will they bring us the flukes of China, the Delhi fevers of India, the dysenteries and amoebae of Malaya, the rickettsial, viral and parasitic diseases of Africa?

The American doctor could profitably be learning about the tropical diseases he will most certainly encounter, not only in the troops he will accompany to the Tropics, but also in the soldiers who will be invalided back to this country. Patriotic citizens with the broom of political power in the hands of the ward stalwarts and the broom of domestic use in the hands of the humblest housewife and the members of her family, had best get to work cleaning every yard, alley and dump in every city of our country. Cleanliness is next to godliness and an epidemic is an ungodly thing.

Societies

Medical Examining Board of Virginia.

At the December, 1941, meeting of the Board, the following were granted licenses to practice medicine in Virginia:

Dr. Ernest Warren Adair, Roanoke.
Dr. Chapman H. Binford, Detroit, Mich.
Dr. Aaron Wilson Brown, Richmond.
Dr. Allen Leet Byrd, Danville.
Dr. Graydon Rader Evans, Dunbar.
Dr. David Ivan Farnsworth, Richmond.
Dr. Allen Montague Ferry, Chevy Chase, Md.
Dr. Thomas Madden Foley, Arlington.
Dr. Glen Gilbert Foster, Stonega.
Dr. Frank Baum Clayton Geibel, Dahlgren.
Dr. Arthur Gersabeck, Maybeury, W. Va.
Dr. Faith Janet F. Gordon, Roanoke.
Dr. Michael Greenwald, Norfolk.
Dr. George Smith Grier, III, Newport News.
Dr. Thomas Shetrond Hershey, Colony.
Dr. John Stewart Howe, Richmond.
Dr. Benjamin Isaacson, Arlington.
Dr. Walt R. Johnson, Macon, Ga.
Dr. Ludwig Helmut Korn, Norfolk.

Dr. Carl J. Kornreich, Bronx, N. Y.
Dr. Ilse Lehmann, Burkeville.
Dr. Lawrence Robert Leviton, Norfolk.
Dr. Wiley D. Lewis, Radford.
Dr. Charles Howard McDevitt, Jr., Woodstock.
Dr. Robert Sylvester Munger, Lexington.
Dr. Alfred Ogus, Norton.
Dr. Philip Brower Parsons, Norfolk.
Dr. Charles Calhoun Powel, Harrisonburg.
Dr. John Orazio Rao, Detroit, Mich.
Dr. William Roberts Sandusky, Charlottesville.
Dr. Leonard G. Scott, Bridgeton, N. J.
Dr. Samuel S. Shouse, Luray.
Dr. George Albert Stewart, Jr., Clifton Forge.
Dr. Samuel Doswald Sturkie, Charlottesville.
Dr. John Thomas Sydnor, Norfolk.
Dr. Roy Anson Thornley, Arlington.
Dr. Helen Burton Todd, Farmville.
Dr. Leo Carl Varden, Arlington.
Dr. Harry Samuel Weitzman, Washington, D. C.
Dr. Francis Droit Willey, Norton.
Dr. Homer P. Williams, Amonate.

HOMEOPATHS

Dr. Anthony R. DiSario, Bassett.
Dr. Paul Regan Howard, Norton.
Dr. Joe Riddick Leigh, Radford.

OSTEOPATHS

Dr. Robert Gustave Scher, Brooklyn, N. Y.
Dr. William C. Spence, Jr., Raleigh, N. C.

The Wise County Medical Society

Met for their regular bi-monthly meeting on February 26th, at Norton, and the members were entertained at a delightful dinner by the physicians of that place.

After dinner the society was called to order by the Vice-President, Dr. F. B. Wolfe, and the following new members were admitted: Dr. Glen G. Foster, Stonega; Dr. Milton Millman, Dr. Alfred Ogus, Dr. Paul Howard, and Dr. F. D. Willey of Norton. A short discussion of the Health Program in the county was opened by Dr. P. R. Cronlund of the Norton Branch of the State Department of Health, and the Society approved the Health Unit's work and its methods of conducting the preventive medicine clinics and vaccinations.

It was voted to send flowers and a suitable message of encouragement to the Society's President, Dr. Samuel H. Rivers, formerly of Calvin, who had been ill in the George Ben Johnston Hospital at Abingdon, for the past month with a strep infection.

It was also decided at this meeting that the Wise County and the Clinch Valley Medical Societies should have a joint meeting on May 2nd in Norton, for which time an interesting program has been arranged by the Clinch Valley Medical Society's Secretary, Dr. C. B. Bowyer, Stonega. The speakers will be from the University of Virginia Medical School and the subjects will be timely topics of interest to all members.

The following officers for the current year were elected: President, Dr. W. B. Barton, Stonega; Vice-Presidents, Drs. Philip R. Cronlund, Norton, F. E. Handy, Appalachia, and J. D. Culbertson, Coeburn; and Secretary-Treasurer, Dr. C. L. Harshbarger, Norton. The Board of Censors are Drs. J. H. Hagy, Imboden, F. S. Givens, Wise, and F. B. Wolfe, Coeburn.

In addition to the above, the following members were present at this meeting: Dr. G. W. Botts, Norton; Dr. C. B. Bowyer, Stonega; Dr. T. E. Chapman, St. Paul; Dr. G. T. Foust, Norton; Dr. C. R. Jones, Dorchester; Dr. D. C. Keister, Osaka; and Drs. J. J. Porter, T. J. Tudor, Paul R. Howard, and Alfred Ogus, all of Norton.

The meeting adjourned until June for which time a full scientific program is being planned, the time and place to be announced later.

The Northampton County Medical Society

Met at Eastville on April the 15th, at which time Dr. Frank H. Redwood of Norfolk was the guest speaker, his subject being "Some Common Intracranial Conditions". At this meeting, also, reports were given by Dr. W. Y. Garrett of Northampton County and Dr. C. E. Critcher of Accomac County on the progress which has been made in the establishment and equipment of the Casualty Stations on "The Shore".

Tazewell County Medical Society.

Dr. Charles T. St. Clair, Jr., of Bluefield, W. Va., was guest speaker before this Society at its regular meeting on March the 12th, his subject being "The Combined Use of Typhoid Vaccine and Sulfathiazole in the Treatment of Eye Diseases". Dr. G. P. Panthers of Richlands read a paper on "Otitis Media and Its Complications" and showed as an adjunct to his paper some excellent movies with sound effect on the subjects of "Otoscopy" and "Acute Mastoiditis", prepared and shown through the courtesy of the Doho Chemical Company. At the business session, Dr. Homer P. Williams of Amonate was elected to membership.

Dr. Rufus Brittain of Jewell Ridge and Dr. Mary Elizabeth Johnston of Tazewell are president and secretary, respectively.

Norfolk County Medical Society.

An excellent program was presented at the Annual Clinic held on April the 9th. The morning session was held at the General Hospital with Dr. N. F. Rodman presiding. Following lunch there, the doctors adjourned to St. Vincent's Hospital for the afternoon session at which Dr. B. L. Parrish presided. The guest speaker was Dr. Edward V. Denneen, Lt. Commander in the U. S. Navy and chief surgeon on a hospital ship, his subject being "Recent Developments in War Surgery". A cocktail hour and dinner at Town Club closed the day.

Dr. Frank S. Johns of Richmond was a guest speaker before this Society on April the 13th, at which time his subject was "Carcinoma of the Colon, with Special Reference to the One Stage Operation".

Roanoke Academy of Medicine.

At the regular meeting of the Academy on April 6th, the following program was presented: Facial Deformities and Methods of Correction, Illustrated, by Dr. Warren B. Davis, Clinical Director of Oral Surgery, Jefferson Medical College, Philadelphia; and Freaks and Curiosities in Surgery, Illustrated, by Dr. John F. Erdmann, Surgeon, Post-Graduate Hospital, New York City.

Dr. M. H. Williams is President of the Academy and Dr. H. B. Stone, Jr., Secretary.

Richmond Academy of Medicine.

At the regular meeting of the Academy on April 14th, Dr. Nathan Bloom presented a case report on "Leiomyoma of the Stomach"; and Dr. James H. Means, Professor of Clinical Medicine at the Harvard Medical School and Chief of the Medical Service at the Massachusetts General Hospital, Boston, spoke on "How We Have Treated Graves' Disease During a Quarter of a Century".

News

A High-Spot of the Roanoke Meeting.

An interesting program is being arranged for the State Medical meeting which is to be held in Roanoke, October 5, 6 and 7. The program committee is endeavoring to arrange an afternoon session at Catawba Sanatorium, as has been done in the past when State meetings have been held here. If this can be worked into the schedule, it will be announced later. If a regular meeting is not held at Catawba Sanatorium, then you should by all means, while you are in this part of Virginia, avail yourself of the opportunity to visit this wonderful setup for tuberculosis patients.

The Catawba Sanatorium was opened July 30, 1909, and up to the present time has had 14,473 admissions. The present patient-bed capacity is 400. It is located on the site of the old Roanoke Red Sulphur Springs, in the Alleghany Mountains, and has an elevation of two thousand feet above sea level. It is about a twelve-mile drive from Roanoke, over a beautiful scenic highway. At this location the State owns twelve hundred acres. The Sanatorium operates its own farm and dairy, which alone consist of three hundred and fifty acres. It also operates and controls its own training school for nurses. After the completion of the two-year nursing course, the nurses receive diplomas and are graduate tuberculosis nurses. They are then given the privilege of taking an additional year's training in a general hospital, and upon finishing this course are eligible to take the State board examination to become registered nurses.

The charm and beauty of the surroundings are exceeded only by the gracious hospitality of those in charge. Dr. J. B. Nicholls, Superintendent, is loved by all who know him. Dr. L. R. Broome, Physician-in-Chief, with Dr. Nicholls, will extend to you, on your visit to Catawba Sanatorium, a welcome which can be equaled in hospitality only by other outstanding places in the State of Virginia.

Catawba Sanatorium is an institution of which Virginians, especially Roanokers, are proud. You have a very enjoyable visit in store for you, if you have never seen Catawba Sanatorium.

The doctors of Roanoke and the surrounding territory are looking forward to and awaiting your visit in October.

June 1 Closing Date for Program Papers.

In an effort to complete plans in the early summer for the program of the Roanoke meeting of the Medical Society of Virginia, notices have been sent

all members of the Society, requesting those who wish to present papers at that time to advise the Executive Office, 1200 East Clay Street, Richmond, by June 1st. Please bear this date in mind and send titles promptly.

Invest Your Money Wisely—Buy Bonds for Freedom!

There is only one goal ahead in America's fight for freedom—victory. To reach that goal, we must put all the nation's resources into our war effort—man power, machine power, material power and money power.

We must not only win this war. We must win the peace and national security with that peace. In the nation's fiscal program, we think not only of the present, but of the future as well. Not all the necessary money for the war effort can be secured in tax revenues. Much of it the Government must borrow. Borrowing from banks and other lending agencies is restricted to the minimum because large loans from these sources expand the credit structure and contribute to inflation. In order to avoid the inflation threat, and at the same time to provide a security program for Americans, the Government asks for loans from all individuals. These loans are made through the purchase of United States Savings Bonds.

By lending dollars today, Americans safeguard the security of America for the future. At the same time, we build toward our own future security. Our money will be paid back with interest at a time when it may meet financial needs arising during the post-war transition period, school expenses of our children, or other family and individual demands and wants. While looking forward, we help ourselves today. When we invest dollars in bonds, we reduce our own funds to be used in buying everyday goods, and thereby help to curb runaway prices and inflation during the war period.

There are Savings Bonds for all individuals and for our medical associations. Series E Bonds are the "People's Bonds" which can be purchased only by individuals. The smallest costs $18.75 and pays $25 at the end of ten years—a 33⅓ per cent increase in value. An E Bond may be redeemed by an owner any time after sixty days from the date of issue. Hence, we can draw upon these financial reserves in case of emergency. Series F Bonds are also appreciation bonds, but these may be purchased by associations and corporations as well as individuals. The F Bonds are twelve-year bonds which provide a return equivalent to an annual interest rate of 2.53 per cent. The smallest costs $18.50 and pays $25 in twelve years; the largest costs $7,400 and pays $10,000 at maturity. Bonds of Series G are sold at par in denominations from $100 to $10,000, and these bonds pay interest at the rate of 2½ per cent throughout their twelve-year maturity period.

Freedom Bonds, Victory Bonds—we physicians and surgeons of Virginia must buy and continue to buy these war securities. There must be dollars for guns, bullets, planes, tanks, and ships, dollars to fight for national and personal security.

Medical College of Virginia News.

Dr. H. Hudnall Ware, Jr., Dr. L. L. Shamburger, and Dr. A. L. Carson attended the American Congress of Obstetrics and Gynecology in Saint Louis recently.

Dr. Frank Charles Mann of the Mayo Foundation and Dr. J. H. Means, chief of the medical service of the Massachusetts General Hospital, were recent college visitors.

Dr. I. A. Bigger attended the post-graduate clinics sponsored by the school of medicine extension division of the University of North Carolina, April 13-14, speaking on "Penetrating Wounds of the Thorax".

The college has received a grant of $9,100 for furniture for the new annex to Saint Philip Hall, dormitory for Negro nurses, and a grant of $19,000 for a program to be launched in nutrition by the college.

The annual Stuart McGuire lectures will be held May 7 and 8 at the college with Dr. John B. Youmans' associate professor of medicine and director of postgraduate instruction, Vanderbilt University Medical School, as the McGuire lecturer. The complete program is given below:

. . . Program . . .

(In cooperation with the Department of Clinical Education, Medical Society of Virginia)

THURSDAY, MAY 7

8:30 p.m.—Stuart McGuire Lecture, "The Meaning of Nutrition."

DR. JOHN B. YOUMANS, *Associate Professor of Medicine and Director of Postgraduate Instruction, Vanderbilt University Medical School, Nashville, Tennessee.*

FRIDAY, MAY 8

10:00 a.m.—The Physiology of the Vitamins.
DR. ROLLAND J. MAIN, *Professor of Physiology, Medical College of Virginia, Richmond, Virginia.*

11:00 a.m.—Nutrition Problems in Post-Operative Patients.
DR. H. B. MULHOLLAND, *Professor of Practice of Medicine, University of Virginia Department of Medicine, Charlottesville, Virginia.*

12:00 m.—The Recognition of Mild or Early Vitamin Deficiencies.
DR. JULIAN M. RUFFIN, *Associate Professor of Medicine in Charge of Physical Diagnosis, Duke University Medical School, Durham, North Carolina.*

1:15 p.m.—Luncheon.

3:00 p.m.—Ocular Manifestations in Deficiency Diseases.
DR. R. H. COURTNEY, *Professor of Ophthalmology, Medical College of Virginia, Richmond, Virginia.*

4:00 p.m.—The Significance and Treatment of Iron Deficiency Anemia.
DR. MAXWELL BERRY, *Associate in Medicine, Medical College of Virginia, Richmond, Virginia.*

8:30 p.m.—Stuart McGuire Lecture, "The Significance of Protein in the Diet."
DR. JOHN B. YOUMANS, *Associate Professor of Medicine and Director of Postgraduate Instruction, Vanderbilt University Medical School, Nashville, Tennessee.*

The lectures and clinics will be given in the Simon Baruch Auditorium, Egyptian Building, Thirteenth and Marshall Streets. Luncheon at Hunton Fall. *Fee: None.*

News from University of Virginia, Department of Medicine.

In connection with the Post-Graduate Course conducted by the Extension Division of the University of North Carolina, Dr. S. A. Vest held a Urology Clinic on the afternoon of March 13th at the Rex Hospital in Raleigh, N. C. Dr. Vest also addressed the physicians of the vicinity that night on the subject of Urology in General Practice.

Dr. G. Slaughter Fitz-Hugh discussed a paper on Tracheobronchial Tuberculosis before the Virginia Chest Society in Richmond, on March 31st.

On April 8th, at the Spring Post-Graduate Course held at the Gill Memorial Hospital in Roanoke, Virginia, Dr. Gayle Crutchfield addressed the group on the subjects: Diagnosis and Treatment of Orbital Tumors; Intracranial Complications Arising from Infections in the Paranasal Sinuses.

At the meeting of the Medical Society of Northern Virginia in Luray, Virginia, on April 8th, Dr. S. A. Vest addressed the group on the subject: Urology in General Practice. Dr. Vest also presented a paper at the meeting of the Middle Atlantic Section of the American Urological Association, in Philadelphia, on April 11th. His subject was "New Hemostatic Suture for Nephrotomy Wounds".

Dr. Fletcher D. Woodward spoke before the Detroit Otolaryngological Society on April 15th on "Management of Fractures of the Nose and Face".

On April 17th, Dr. John S. Lockwood, Associate in Surgery at the University of Pennsylvania, delivered an address before the Virginia Alpha Chapter of Alpha Omega Alpha, in the Medical Amphitheatre. He spoke on "The Progress Toward an Understanding of the Mode of Action of the Sulfonamides".

American Medical Association.

The Official Call has been issued for the ninety-third annual session of this Association to be held in Atlantic City, June 8-12th, under the presidency of Dr. Frank H. Lahey of Boston.

The House of Delegates will convene on Monday, the 8th, and the Scientific Assembly will open with the general meeting on Tuesday, the 9th, at 8 P. M. The various sections of the Assembly will meet on Wednesday and subsequently according to their respective programs.

If you plan to attend this meeting and have not made hotel reservations, it is suggested that you write at once to Dr. V. Earl Johnson, Chairman Hotel Committee, 16 Central Pier, Atlantic City, New Jersey. A full list of the hotels with rates appears in the *Journal of the American Medical Association.*

The American Medical Golfing Association

Will hold its annual tournament at Seaview Country Club, Atlantic City, on Monday, June 8. Forty trophies and prizes will be awarded. The clubhouse, where the golfers' banquet will be held at 7:00 p. m. on June 8, is one of the most elaborate in the country, featuring a tremendous indoor salt-water pool. The 250 bedrooms for guests will be available to AMGA Fellows who may write Walt P. Conaway, M.D., Chairman of the Atlantic City Golf Committee, 1723 Pacific Avenue, Atlantic City, New Jersey, for reservations.

All male Fellows of the American Medical Association are eligible and cordially invited to join the

Association. Write Executive Secretary Bill Burns, 2020 Olds Tower, Lansing, Michigan, for an application blank. Participants in the tournament are required to present their home club handicap, signed by the club secretary, at the first tee on the day of play. No handicap over thirty is allowed. Only Active Fellows of the American Medical Golfing Association may compete for prizes. No trophy is awarded a Fellow who is absent from the annual dinner.

Personnel Notes, State Department of Health.

Dr. William R. Martin has been appointed Acting Health Officer of Charlotte County, effective April, 1942, to take the place of Dr. R. Bruce Mallett, who has entered the military service in the Medical Corps of the U. S. Army Air Corps.

Dr. Beverly L. Holladay has resigned as Health Officer of Wythe County, effective April 1, 1942, to accept a position in Statesville, North Carolina.

Dr. Wallace E. Baker has been appointed Assistant Epidemiologist in the Division of Venereal Disease Control, effective March 15, 1942. Dr. W. E. Chapin of Richmond has been appointed to succeed Dr. Baker, who formerly was Field Epidemiologist for the Camp Lee Area with headquarters in Petersburg.

Dr. Wright Clarkson,

Petersburg, gave an illustrated talk before the Hopewell Kiwanis Club on April the 9th, on "Cancer Control and the Wonders of X-Ray". Dr. Wayne M. Phipps, program chairman, introduced Dr. Clarkson.

Dr. B. L. Carter

Recently returned to his home at Blue Spring Run, after spending a couple of months in Miami and Tampa, Florida.

Annals of Surgery.

Effective with the June issue, *Annals of Surgery* will be published in Philadelphia by J. B. Lippincott Company and simultaneously in Spanish at Buenos Aires by the Guillermo Kraft Company—a step toward the consolidation of medical interests in the United States and South America. *Annals of Surgery*—oldest surgical journal in the English language—was founded in 1885 by Dr. Lewis Stephen Pilcher who was its editor for fifty years. His son, James Taft Pilcher, is at present managing editor with an editorial board composed of doctors representing medical schools and national surgical societies of the United States and Canada.

Industrial Health Work Progressing in Virginia.

Dr. Orlen J. Johnson, assistant secretary of the Council on Industrial Health of the American Medical Association, spent several days during April in Virginia and had conferences with officers of the Medical Society of Virginia and members of its Committee on Industrial Health. Dr. Johnson expressed whole-hearted appreciation over the way industrial health is being promoted by the Society—the joining of efforts for this year of the Department of Clinical and Medical Education with the Committee on Industrial Health, securing speakers on phases of industrial medicine for the program of the Virginia Safety Conference to be held in Richmond, May 21-23, plans for talks before the Virginia Manufacturers' Association, and also the plan for giving a course in industrial health at the Medical College of Virginia.

Sight-Saving Classes.

Four colleges and universities, in cooperation with the National Society for the Prevention of Blindness, are offering courses for the training of teachers and supervisors of sight-saving classes this summer (1942). The institutions and the dates of these courses are as follows:

Peabody College for Teachers, Nashville, Tenn., June 22-August 1.

Wayne University, Detroit, Mich., June 29-August 7.

State Teachers College, Buffalo, N. Y., June 29-August 7.

Teachers College, Columbia University, New York, N. Y., July 6-August 14.

Details regarding the courses may be obtained from the respective colleges or from the National Society for the Prevention of Blindness, 1790 Broadway, New York City.

Dr. Alex N. Chaffin,

Recently at Dante, located at Woodstock, the first of this month, and will be associated with the Cora Miller Hospital where he will limit his practice to surgery.

Vitamin Films in Color

Eli Lilly and Company, Indianapolis, announces the release of three 16-mm. silent motion pictures in color descriptive of vitamin deficiency diseases. The films are available to physicians for showing before medical societies and hospital staffs. One

deals with thiamine chloride deficiency, one with nicotinic acid deficiency, and the third with ariboflavinosis. The major part of all films concerns the clinical picture presented by the patient with reference to treatment by diet and specific medication. They do not contain advertising of any description, nor is the name of Eli Lilly and Company mentioned.

The films were made at the Nutrition Clinic of the University of Cincinnati at the Hillman Hospital, Birmingham, Alabama, where studies were initiated in 1935, under the joint auspices of the Department of Internal Medicine of the University of Cincinnati and the University Hospitals of Cleveland. Subsequently, these investigations became a cooperative project between the Departments of Medicine of the University of Cincinnati and the University of Alabama, and the Department of Preventive Medicine and Public Health of the University of Texas.

Transfers.

The following members of the Society, now in Service, have, during the past month, notified us of their transfers:

Major E. J. Haden to Fort Monroe.
Capt. Guy C. Richardson to Chickasha, Okla.
Capt. Oswald M. Weaver to Des Moines, Iowa.
Capt. Ayer C. Whitley to care Postmaster, New York City.
Lt. James E. Amiss to Iceland.
Lt. Charles H. Dow to Langley Field.
Lt. D. O. Helms to Orangeburg, S. C.
Lt. Nowell O. Nelms to Maxwell Field, Ala.

Married.

Dr. George Stone Ferrell and Miss Ethel Callison Plunkett, both of Lynchburg, April 9th. He is a graduate of the Medical College of Virginia in 1940.

Dr. James Baker Twyman, Charlottesville, and Miss Bess Dariotas, Portland, Oregon, March 27th. Dr. Twyman is a graduate in medicine from the University of Virginia in 1940 and is at present completing an internship at the New Haven Hospital, New Haven, Conn.

Dr. Alvah L. Herring, Jr., and Miss Douglas Randolph Donnan, both of Richmond, April 18th. Dr. Herring is an alumnus of the University of Virginia Medical School, class of '41.

Dr. William Massie Smethie, class of '39, Medical College of Virginia, and Miss Avis Lee Harrington, Polkton, N. C., April 4. They will reside in Rocky Mount, N. C., where Dr. Smethie is resident physician at Park View Hospital.

Dr. C. C. Chewning, Jr.,

Richmond, has been appointed physician in charge of the medical service at the State Penitentiary, succeeding Dr. F. I. Bloise who resigned to accept a commission as Major in the United States Medical Corps.

Dr. D. Hunter Marrow

Has returned to his home in Boydton for the summer after spending the winter months at Daytona Beach, Florida.

The Spring Graduate Course

Of the Gill Memorial Hospital, Roanoke, which was completed early in April, was attended by a total of ninety-eight physicians from twenty-five states and Canada, a number of applicants having to be refused admission. There was a guest faculty of seventeen physicians.

Lynchburg Tumor Clinic.

The Cancer Committee of the Medical Society of Virginia has certified under its regulations a tumor clinic in Lynchburg, to be known as the Lynchburg Tumor Clinic. The Co-directors are Dr. Joseph W. Houck and Dr. John Devine, Jr. The clinic is associated with the Lynchburg General Hospital. Dr. Stafford Handy and Dr. Walter Thornton are the Radiologists, and Dr. Dennis Caldwell and Dr. James Wilkins are the Pathologists.

EDWIN P. LEHMAN, M.D., *Chairman.*

A Correction.

In the January 1942 issue of the MONTHLY, the error was made inadvertently of stating that Dr. A. Wilson Brown, recently resigned, was the first full time venereal disease officer for Richmond. We regret this statement as Dr. Francis W. Upshur was the first person to hold this position in Richmond, having served from April 1, 1938 to April 15, 1940.

Ex-Interne Club of Stuart Circle Hospital, Richmond.

The twelfth annual meeting of the Club was held in Richmond on April the 8th, under the presidency of Dr. A. S. Hurt, Jr., of Richmond. Approximately twenty members attended the entire program, which included clinics, demonstrations, and papers, many of these dealing with war problems. Between the various sessions, those attending were entertained at luncheon at the Hospital and with a buffet supper at Commonwealth Club. Following the evening program, the Hospital Staff and members of the Club were guests of Dr. Stuart Michaux at his home, "Beaumont".

Officers elected for the ensuing year were: President, Dr. Herman Richardson, Midlothian; vice-president, Dr. Charles Newland of Brevard, N. C.; and secretary-treasurer, Dr. Reuben F. Simms (re-elected), Richmond.

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Obituaries

Dr. Aaron Jeffery,

For fifty-five years a member of the Medical Society of Virginia, died at his home in Newport News on April the 14th. He was a native of Richmond and seventy-nine years of age. Dr. Jeffery graduated from the Medical College of Virginia in 1884 and practiced for some years in Richmond before moving to Newport News in 1897 where he had since been actively identified with medical interests of that place. His wife died several years ago.

Dr. William Binford King,

Well known physician of northern Virginia and former resident of Richmond, died as the result of a heart attack at his home in Arlington, on April the 10th. He was fifty-three years of age and graduated in medicine from the George Washington University and was for a number of years a member of its faculty as also for a time of the Georgetown University medical faculty. He was a member of his local, state and national medical associations and always took an active part in medical affairs in his community. At the time of his death he was assistant chief medical officer of the Emergency Medical Service in the Washington, D. C., metropolitan area defense organization. His wife, three children and a large family connection survive him.

Dr. Joseph Benjamin Bailey,

Well known physician of Keysville, died suddenly on April 6th while making a call. He was a native of Chesterfield County and seventy-two years of age. Dr. Bailey graduated from the Medical College of Virginia in 1894. He was formerly a member of the Medical Society of Virginia. His wife and two sons, Drs. D. Herman Bailey, Sandston, and J. R. Bailey, Keysville, survive him.

Dr. Harry Fletcher White,

A well known former resident of Norfolk, but more recently of New York City, died on January 23rd of angina pectoris. He was fifty-eight years of age and a graduate of the former University College of Medicine, Richmond, in 1908. Dr. White entered the U. S. Public Health Service in 1913 and at the time of his death was surgeon in charge of the U. S. P. H. S. Hospital in New York. He was formerly a member of the Medical Society of Virginia. Besides his wife, he is survived by a daughter and four sons, two of them being Drs. S. C. and Harry F. White, Jr. A brother is Dr. Rooker J. White of Keller.

Dr. Frank Eugene Booker,

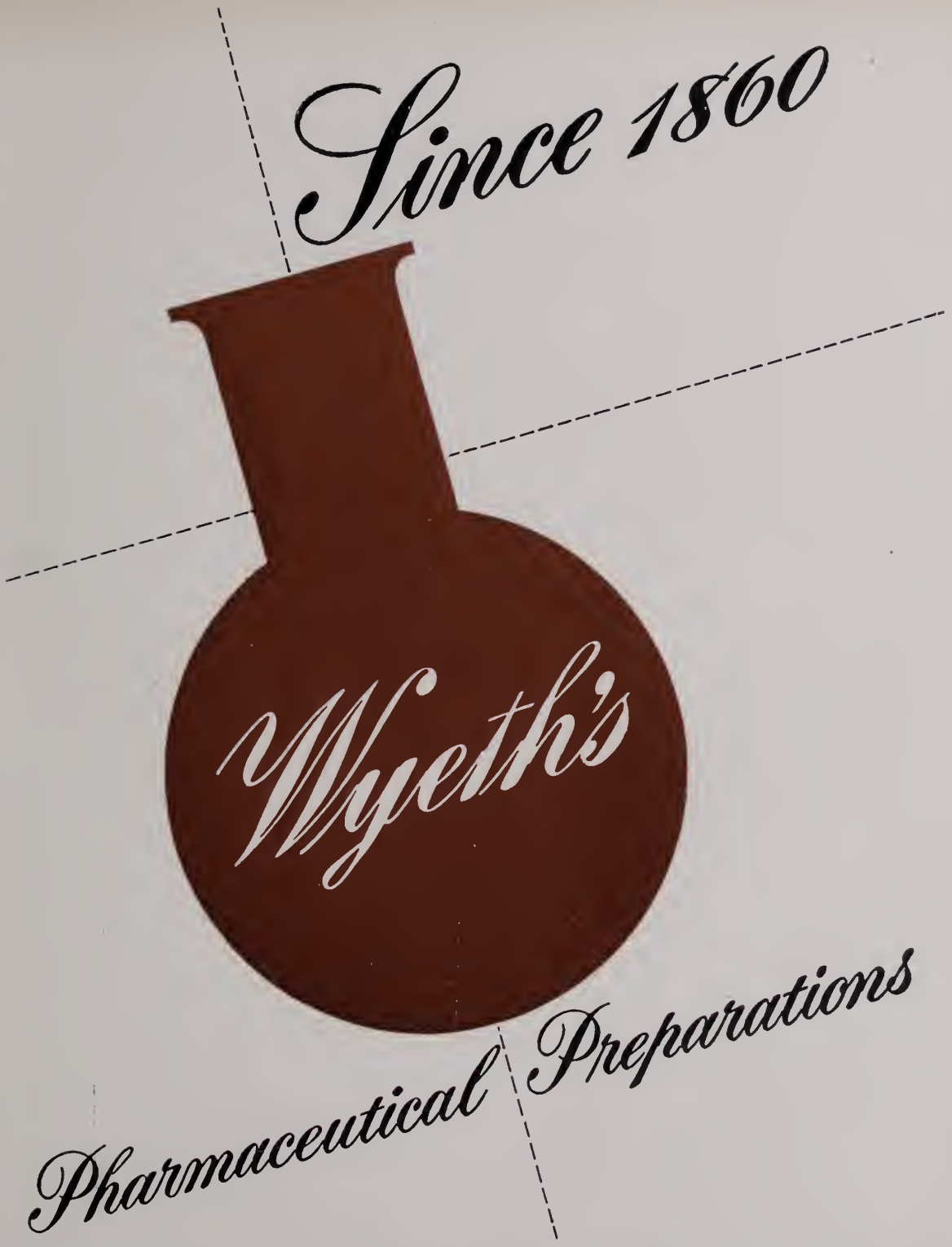
Prominent physician of Halifax County, died March 26th, after an illness of several years. He was sixty-seven years of age and a graduate of the Medical College of Virginia in 1898. Dr. Booker was formerly a member of the Medical Society of Virginia. His wife and four children survive him.

Dr. Joseph Bolivar DeLee,

Internationally known obstetrician of Chicago, died April 2nd, at the age of seventy-two. In addition to founding Chicago's Lying-In Hospital and assisting in delivering more than 8,000 babies, he had written several books on obstetrics. Dr. DeLee taught obstetrics at Northwestern University for thirty-two years and had been professor emeritus at the University of Chicago since 1929.

Vice-President of the Upjohn Firm Dies.

Malcolm Galbraith, vice-president and director of sales of the Upjohn Company, died Friday morning, April 10, in Kansas City. Mr. Galbraith was born in Bowmanville, Ontario, Canada, October 23, 1876. He received his bachelor of pharmacy degree at Ontario College of Pharmacy in 1898, entering in the drug business in Ontario the same year. He later became a naturalized citizen of the United States. In 1909 he left the H. K. Mulford Company, of Philadelphia, to join the Upjohn Company. In October 1929 he was elected to the board of directors and named director of sales. He was made vice-president of the company in May, 1936.



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VOL. 69. June, 1942 NO. 6.

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Annual Meeting—Medical Society of Virginia
Roanoke, October 5, 6 and 7, 1942

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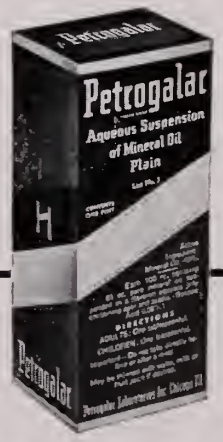

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Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 69. No. 6.
WHOLE No. 1080. RICHMOND, VA., JUNE, 1942. $2.00 A YEAR
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Guest Editorial

War Wounds of the Major Arteries of the Extremities

SURGEONS in the combat zones in this war are encountering a high incidence of serious wounds, many of them involving large arteries. The proper management of the severely wounded requires exception judgment and skill, especially when the large arteries of the extremities are involved, for one then has to consider the danger of the loss of limb as well as the danger of the loss of life. This concept is especially important during the periods of emergency treatment and subsequent transportation.

The emergency treatment of patients with wounds of large arteries consists essentially of controlling the hemorrhage and combating shock. Bleeding must be controlled promptly and efficiently, but, when possible, measures should be employed which do not interfere with the collateral circulation. There is a tendency to consider the application of a tourniquet the procedure of choice for the control of bleeding from the large arteries of the extremities, but this is not as it should be. The tourniquet should be thought of as the final resort, to be used only when other measures have failed or are obviously inapplicable, for it obliterates all collateral channels and thereby jeopardizes the life of the limb. Bleeding from vessels exposed by the destruction of overlying tissues should be controlled by the application of ligatures both proximal and distal to the injured segment. When blood is escaping through a deep narrow channel, local compression will frequently suffice. If the bleeding is temporarily controlled by local compression, a tourniquet should be placed loosely around the extremity during transportation; it should not be tightened unless bleeding recurs. If it is necessary to control hemorrhage by the use of a tourniquet, a placard stating the time of its application should be attached to the patient's clothing. Patients so designated should be transported to a hospital and treated with a minimum of delay. If the tourniquet must be kept in place unduly long, it should be released for a few minutes each hour, the bleeding being temporarily controlled by direct pressure.

When patients with wounds of the major peripheral arteries reach a surgical hospital, they should be treated for shock, and the decision then made as to whether or not immediate operation is necessary. This decision may be difficult, but, in general, if bleeding does not recur and the circulation in the extremity is adequate, op-

eration may be deferred. If operation is necessary, the injured tissues overlying the vessel should be excised and the artery exposed before the decision is made whether to repair or ligate it. Repair is especially indicated when the popliteal, common femoral, or carotid arteries are involved, because of the small number of collateral channels associated with these vessels. During World War I, the repair of injured arteries was not often feasible, but the postoperative administration of heparin has greatly improved the results from arterial suture.

If the character of the wound precludes successful repair, the injured segment of vessel should be resected and both ends ligated with heavy nonabsorbable material. The concomitant vein should also be ligated. Prompt measures must then be taken to preserve the integrity of the extremity, by increasing its blood supply, by decreasing the rate of metabolism, and by preventing infection. Measures to increase the blood supply are, in the order of their importance, sympathetic nerve block, placing the extremity at the proper level—usually somewhat below that of the left ventricle —the administration of vasodilator drugs as nicotinic acid, papaverine, and whiskey, and the application of heat *proximal* to the site of occlusion. Local ischemia must be prevented if possible by frequent change of position and careful padding over bony prominences. The blood volume and content must be restored by transfusion, and if there is cyanosis the administration of a high concentration of oxygen is desirable. Occasionally the flow of blood through an extremity may be increased by the use of the so-called Pavex machine, which alternately produces positive and negative pressure. Unfortunately, this form of treatment is undesirable in the presence of extensive wounds and is absolutely contraindicated when infection is present. Furthermore, such a machine is of value only when the obstruction occurs at a sufficient distance from the trunk to permit proximal application of the cuff. The metabolic rate may be decreased by putting the extremity at complete rest and by temperature control. The optimum temperature cannot be stated definitely, but it is certain that heat should not be applied, and moderate cooling, to ordinary room temperature—72° F—is probably desirable. An attempt should be made to prevent infection by the local and systemic use of the sulfonamide drugs.

With the use of these measures, several of which have been introduced since World War I, it is to be expected that the untoward results of major vessel ligation will be appreciably decreased in the present war.

I. A. BIGGER, M. D.,
Professor of Surgery,
Medical College of Virginia, Richmond.

CLINICAL-PATHOLOGICAL CONFERENCE*

LOUIS HAMMAN, M.D.,
Baltimore, Maryland.

Dr. Richard Whitehill very kindly abstracted the records of the two cases to be presented and discussed this morning. With the abstracts came a courteous note explaining that he had gone to great pains to find easy cases so that there would be no danger of embarrassment by a public failure to diagnose them correctly. My suspicion was aroused when I discovered that he had gone back three years to find the first easy case. However, you must be the judge of how easy the cases are.

CASE 1.—W.G., a 23-year-old single colored male, was admitted to the Norfolk General Hospital on June 14, 1938, and discharged on July 20, 1938. The patient stated that four weeks before admission he had strained himself and his testicles had become swollen. He had no urethral discharge. This swelling improved. Two weeks later he developed a pain around the umbilicus which was continuous and did not radiate. There was no nausea or vomiting. Before the onset of the abdominal pain his howels had moved normally. Subsequently, however, they had been somewhat constipated. He thought he had been running some fever ever since the onset of the abdominal pain and that he had lost about twenty pounds. The patient's past health had been good. He had had no previous similar attacks. He had had the usual childhood diseases and had never been operated on. He had never had gonorrhoea but had had a sore penis four years before. He had received no anti-luetic treatment. He had never been troubled with shortness of breath or cough. For an indefinite time he had had some eructation of gas and had had nocturia for two to five times. The family history was non-contributory.

Physical examination revealed a well-developed but poorly nourished colored male who was in no apparent distress. The temperature was 101, pulse 88, respirations 22, and blood pressure 110 over 70. The head was negative, the pupils reacted normally to light and accommodation, the nose was negative, the tonsils were chronically infected and there was no rigidity of the neck. The lungs were clear to percussion and auscultation. The heart was not enlarged, the rhythm was regular and there were no murmurs or accentuated sounds. The abdomen was flat and no masses or viscera were palpable. The recti were tense around the umbilicus and there was some tenderness on deep pressure in the mid upper epigastrium. There were a few shotty inguinal lymph nodes. There was no generalized glandular enlargement. The genitalia were normal. The rectal examination was normal. There was no abnormality of the skin. The hemoglobin was 101, the red cell count was 5,060,000 and the white cell count 19,600. There were 87 per cent neutrophiles, 9 per cent small lymphocytes, 3 per cent endothelial cells, and 1 per cent eosinophiles. The Wassermann reaction was positive. The urine had a specific gravity of 1.018 and was negative for albumen and sugar. The microscopic examination of the urine was negative. On admission no definite diagnosis was made.

On June 16th it was noted that there was some rigidity over the entire abdomen and that there was distinct tenderness over the region of the appendix, umbilicus and epigastrium. At that time diagnosis of acute appendicitis, diverticulitis, and perforated ulcer were considered. For the first ten days the patient ran a spiking temperature from 99 to 102. The urine continued negative. The white count ranged between 13,000 and 26,000. A Widal reaction on June 19th showed a four plus in a one to fifty dilution, four plus in a one to one hundred dilution, two plus in a one to two hundred dilution and one plus in a one to four hundred dilution. A stool culture was negative for pathogens. The patient continued to complain of pain in the upper central portion of the abdomen and continued to have muscle spasm and tenderness in the epigastrium. Because of these findings, and the positive Widal, a diagnosis was made of typhoid fever with a perforated ulcer which had probably walled off. However, this diagnosis was in doubt, especially since it was learned that the patient had had typhoid vaccine in 1935. His spleen was never felt. It was decided to perform an exploratory laparotomy and this was done on June 23rd. At operation the abdominal cavity was found to contain a moderate amount of free oily fluid and there seemed to be liquefaction of the fat in the omentum and mesentery. Several large glands were found. The stomach and pylorus were essentially negative. The kidneys seemed normal. The spleen was slightly larger than normal and there were adhesions about it. The pancreas did not seem remarkable. The liver did not seem remarkable. The appendix was elongated and somewhat hyperemic. An appendectomy was performed and two enlarged glands were removed. The pathological diagnosis of these specimens was subacute appendicitis and subacute lymphadenitis.

For the remainder of the patient's stay in the hospital he ran an irregular, swinging fever from 99 to 102. He developed a moderate anemia with a hemoglobin of 60 and a red count of 3,000,000. His white count remained between 15,000 and 20,000. The differential white count showed 85 per cent to 90 per cent polymorphonuclear leucocytes. His urine remained negative except for traces of albumen. Blood cultures and stool

*Presented at the annual meeting of the Medical Society of Virginia at Virginia Beach, October 6-8, 1941.

cultures were negative. Two more Widal reactions showed about the same agglutination with B. typhosus but were negative with paratyphoid A. and B., and B. melitensis. A spinal puncture showed normal pressure and cytology, a moderate increase in globulin and a negative Wassermann. His pulse became more rapid. His progress was generally downhill. He continued to complain principally of abdominal pain. On July 20th the patient left the hospital against advice. At that time a diagnosis had not been reached.

On August 5, 1938, the patient was admitted to St. Vincent's Hospital and died on August 7, 1938. He was extremely ill and a fragmentary history was obtained. He stated that he had continued to lose weight and strength and was running fever. Very recently he had begun to spit up blood. His temperature was normal, his pulse 100, and respirations 40. He showed extreme malnutrition. The heart was negative and there were bubbling rales throughout both lungs. The abdomen was generally tender and rigid. The scar of the recent operation was well healed. The urine showed three plus albumen and a few pus cells. The hemoglobin was 50 per cent, the red cell count 2,790,000, the white cell count 34,000, of which 80 per cent were polymorphs, 8 per cent lymphocytes, 10 per cent stab cells, and 2 per cent transitional. An X-ray of his lungs showed that the lower two-thirds of both lungs were involved by an extensive atelectatic process which gave the appearance of snow balls. It was estimated that there was less than 10 per cent of healthy lung tissue. The transverse diameter of the heart measured 14½ cm. and the greatest diameter of the thorax 26 cm. The enlargement was almost entirely in the left ventricle. The X-ray diagnosis rested between (1) metastatic carcinoma, (2) pulmonary edema and atelectasis, (3) advanced pulmonary tuberculosis, and (4) fungus infection of the lungs. The patient's condition became steadily worse. He was short of breath and coughed up blood. Two days after admission he expired. The clinical diagnosis at this time was pneumonia and pulmonary edema.

DR. HAMMAN'S DISCUSSION

I think it is at once clear that the clinical manifestations here reported are not typical of those of any common, well-known disease. When I first read the records, I had only a confused impression of what the disease might be and after having read them over again and again, I still am bewildered. The clinical diagnosis recorded at the time of the patient's death was pneumonia and pulmonary edema. It is obvious that this is not a satisfactory diagnosis of the disease from which the patient suffered but merely a diagnosis of the terminal events. Therefore I conclude that the astute clinicians of Norfolk were puzzled and uncertain just as I am.

Let us begin by considering some of the details of the illness, details which do not seem to fit smoothly into the general clinical picture.

The illness began with a strain followed by swelling of the testicles. When the patient entered the hospital four weeks later, the genitalia are reported to have been normal. What is the meaning of this curious bit of evidence? I doubt that it is purely incidental or irrelevant. Perhaps were one sufficiently shrewd, he might recognize it as an important clue to the diagnosis but I confess that I can make nothing helpful of it. At the operation the peritoneal fluid is described as having been oily. What is the significance of oily peritoneal fluid? I have never encountered oily peritoneal fluid and have no idea what interpretation to put upon its presence. Perhaps this is another important clue to the diagnosis but it does not help me and I shall have to wait for the pathologist to make these matters clear.

I wish we were able to decide what relation to the whole illness the extensive pulmonary lesions bore that were present at the patient's last admission to the hospital, two days before he died. Were they an integral part of the illness or were they merely a terminal pulmonary infection? It would be helpful in this connection had roentgenograms of the chest been taken during the first admission, but during that admission the symptoms were entirely abdominal and there were none to attract attention to the lungs. I shall choose to consider the pulmonary symptoms as those of a terminal infection realizing that this choice may be shown to have been wrong.

Our problem then is the diagnosis of an obscure febrile illness of three months duration with symptoms localized chiefly in the abdomen. It will be well to consider all diseases that might possibly cause such clinical manifestations before venturing to decide upon a choice or at least express a preference. The possibilitities may be divided into three groups; first, malignant growths, second, the group of lymph node diseases often spoken of as lymphoblastomata, third, infections.

It is unnecessary for me to emphasize the fact that malignant tumors are often masked by the appearance of a chronic infection. This is particularly true of carcinoma which may cause a long-continued high grade fever under circumstances when the location of the growth escapes detection. Every physician can recall many such experiences. A few weeks ago I examined a man about 50 years of age who for months had had fever, loss of weight

and strength, abdominal discomfort and a decided leucocytosis, from 30,000 to 40,000, with a pronounced eosinophilia. In spite of thorough and complete investigations no abnormality had been found to explain these grave symptoms. Finally, a mass was felt deep in the left side of the abdomen. Exploratory section disclosed a large inoperable mass, on microscopical examination a carcinoma, but its exact nature and point of origin could not be determined. I recall the interesting case of one of the laboratory technicians at the hospital. He was a young man, 27 years of age. He was taken ill with fever, leucocytosis and abdominal pain and tenderness which led to the diagnosis of appendicitis. A normal appendix was removed. Fever, abdominal discomfort and leucocytosis with a high percentage of eosinophiles persisted for months. Finally, pain became localized in the right upper quadrant of the abdomen and the liver began to enlarge. A second operation was performed. The liver was found to be nodular and an excised nodule proved at microscopical examination to have the characteristic structure of primary liver cell carcinoma. A little later the diagnosis was verified at autopsy. A short while ago, I saw a man over fifty years of age who complained of weakness, cough, and fever. He had been very thoroughly examined a few weeks before and no abnormality had been discovered except anemia and constant leucocytosis, 40,000 to 50,000, with a high percentage of eosinophiles. At this time a roentgenogram disclosed a beginning mass in the mediastinum and the diagnosis of Hodgkins disease was made. A little later the patient died and at post-mortem examination the mass proved to be a bronchogenic carcinoma. It is needless to multiply illustrations.

In the situation now before us the possibility of tumor must be entertained but after considering this possibility, I think you will agree that it is not likely to be the correct diagnosis. The evidence is against it rather than in its favor. In the first place the patient was only 26 years of age. Malignant growths occur at that age but not often and when they do they usually produce large tumors. Again, a very thorough examination of the abdomen made at operation failed to reveal the presence of a growth. Finally, the microscopical examination of the lymph node removed at operation showed no evidence of tumor.

Among the lymph node diseases that may resemble chronic infections are leucemia lymphosarcoma and Hodgkins disease. It is not sufficiently realized that leucemia may for months cause fever with no or only slight enlargement of the lymph nodes and without characteristic changes in the blood. I recall a man of about seventy years of age who developed pericarditis with effusion and myocardial insufficiency. These manifestations gradually subsided and the patient seemed on the road to recovery when suddenly fever came on, the spleen enlarged, and the blood began to show the characteristic changes of leucemia. I recall too, and with embarrassment, a boy 12 years of age with fever, joint symptoms, and increase of the lymphocytes in the blood which was diagnosed as Malta fever. The autopsy demonstrated lymphoid leucemia. I can see no ground whatsoever to justify the diagnosis of leucemia in the case we are now discussing and refer to the possibility only as a caution that leucemia should always be considered in the diagnosis of obscure fever.

Lymphosarcoma seems to be just as unlikely a diagnosis as leucemia. In abdominal lymphosarcoma there is nearly always a tumor and usually a large one; enlarged retroperitoneal lymph nodes could hardly have been missed at operation, nor could lymphosarcoma of the intestinal wall; the mesenteric lymph node removed at operation did not show the characteristic structure of lymphosarcoma.

Hodgkins disease cannot be so lightly discarded for it is often accompanied by fever and its clinical manifestations are almost protean. Acute forms of abdominal Hodgkins disease occur which present the greatest difficulty in diagnosis. There may be diffuse infiltration of organs without discernible lymph node enlargement or other tumor. The character of the fever is often revealing, that is when it consists of bouts of fever alternating with intervals of normal temperature. In this form of Hodgkins disease the spleen is usually enlarged. Therefore many of the features of Hodgkins disease are absent and when we add to this the fact that the mesenteric node removed at operation showed none of the characteristics of Hodgkins disease this diagnosis may safely be discarded.

Our considerations up to this point lead us to the conclusion that the patient suffered from some infection and we must now turn our attention to a long list of infectious diseases. For the sake of convenience we may divide the list into two groups,

first, those which we see infrequently, second, those which are more common and therefore better known.

In all cases of febrile disease which do not fit at once into some well known diagnostic category it is prudent to pause and consider the possibility that the symptoms may be due to some rare infection. During the past twenty years we have learned the importance, under these circumstances, of taking into account three diseases which we are gradually learning to recognize. They are not new diseases but only during the past few decades have they attracted attention. I refer to sarcoid, disseminated lupus erythematosus, and periarteritis nodosa. In the case now before us sarcoid at once may be discarded. Although it causes protean clinical symptoms, it is a relatively benign disease, lasts for years, and never appears as a severe, acute infection. Disseminated lupus is quite unlikely. It is true that the typical eruption may not appear but even so the symptoms are quite different from those displayed by this patient. As regards periarteritis nodosa, there is no characteristic clinical picture. The symptoms are so varied that one case shows little resemblance to another. Unless an excised bit of muscle shows characteristic microscopical lesions it is seldom possible to make a confident diagnosis. It is one of the most difficult of diagnoses and I must confess that I have shown little skill in recognizing the disease. When I do not make the diagnosis it is usually wrong; when I do not make the diagnosis autopsy may reveal it. Therefore I am willing to admit that this may be periarteritis nodosa though I think it is not. Pain is a very common symptom of periarteritis nodosa as is also gradually increasing involvement of the kidneys. Neither of these symptoms was present to a striking degree in the case we are discussing.

There remains then the group of more common infections. Many of these we may dismiss at once, namely, the typhoid group of infections and pyogenic infections. The symptoms were not those of these diseases and bacteriological studies were negative. A localized abscess could have been considered early in the course of the disease but not later after the illness had gone on for three months and no evidence of abscess had been discovered. That the illness could have been Malta fever is almost incredible. It must not be forgot that the patient had syphilis and that syphilitic infection often causes long continued obscure fever. However the clinical manifestations were quite different from those usually observed in syphilitic fever and the findings at operation are not compatible with that diagnosis.

Finally, the three infections that to me seem more reasonably to correspond with the clinical manifestations than any others are tularemia, tuberculosis and actinomycosis. It may seem odd to include tularemia among the three because the symptoms bear no resemblance whatsoever to the usual symptoms of tularemia. Nevertheless occasionally subacute forms of the disease occur which may go on for months and are difficult to diagnose. Not long ago there was such an instance at the Johns Hopkins Hospital which upon the wards was diagnosed Hodgkins disease but at autopsy tularemia.

When a young colored man is taken ill and dies after three months of a febrile illness the chances strongly favor the diagnosis of tuberculosis. This is the sensible diagnosis to make and there must be good reason for discarding it. In the case under consideration the chief objection to the diagnosis of tuberculosis is what was found at operation. The operation was performed about six weeks after the beginning of the illness and up to that time the only localizing symptoms had been abdominal. Had the illness been due to tuberculosis, then one would expect that at operation evidence of tuberculosis would have been found. Yet no such evidence was discovered. There was no tuberculosis of the organs, no tuberculous peritonitis, no tuberculosis of the excised mesenteric lymph node. This negative result makes the diagnosis of tuberculosis untenable.

We are left with actinomycosis. When I concider this diagnosis I must admit that the manifestations are far from characteristic of the infection. I have seen cases of actinomycosis diagnosed erroneously even at operation (once tuberculosis, on another occasion carcinoma) but I have never seen a picture just like this produced by actinomycosis. The duration of the illness in actinomycosis is longer; nearly always tumors form; and as a rule there is abscess formation. Nevertheless, in spite of these difficulties the condition seems to me to resemble actinomycosis more than anything else and though I am far from confident that this diagnosis is correct still it is the one that I prefer.

DR. ARNOLD F. STRAUSS, St. Vincent's Hospital, Norfolk: I shall report only the essential findings of the

autopsy. The body was that of a highly emaciated young negro and showed no external findings except a scar of a recent abdominal operation and a small one at the sulcus of the penis. Upon opening the abdominal cavity there were numerous adhesions in the region of the ascending and transverse colon. The mesentery and omentum were void of fat. The abdominal lymphnodes were slightly enlarged and pinkish on cut surface. The most striking findings were small whitish, rather firm nodes within the walls of the smaller arteries of the mesentery, which varied in size up to 0.5 cm. in diameter. Upon opening the cavity of the chest the fat tissue of the mediastinum was of gelatinous, yellowish gray appearance. The picture of the heart was most impressive. The coronary arteries appeared irregularly thickened by whitish nodes which frequently showed reddish centers. These nodes extended to twice the diameter of the arteries. The pericardial fat tissue had a peculiar appearance: it was stiff, yellowish gray and glistening upon cut surface, almost resembling amyloid. The spleen was not enlarged. On section, it showed a few dilated vessels with slightly thickened walls to which were adherent dark red firm blood clots. A few of the liver vessels had a similar appearance. The kidneys presented identical changes and, in addition, there were numerous yellowish white, triangular foci with red periphery, varying in size. The perirenal fat tissue resembled that of the epicardium but was a trifle gelatinous. The canaliculi of the testicles were adherent to each other.

The diagnosis was:

Periarteritis nodosa.

Nodular swelling, thrombosis and small aneurysms of the arteries of the heart, liver and kidneys. Multiple renal infarctions. Nodular swelling of the mesenteric arteries. *Microscopically:* Periarteritis nodosa of the spleen, pancreas, testicles with fibrosis of the last, of seminal vesicles and prostate, of the small arteries of the hilum of the lung, of the perirenal and adrenal fat tissue, of the muscles of the abdominal and chest walls with myositis (other muscles not examined). Myocardosis and pseudoscars of the myocardium.

Generalized chronic panniculitis and serous atrophy of the mediastinal, pericardial and epicardial fat tissue as well as of the perirenal and periadrenal fat tissue with peculiar stiffness of the latter. (*Microscopically:* no atypical amyloidosis of fat tissue.) Extreme emaciation. Generalized chronic lymphadenitis.

Terminal bronchopneumonia of the right lower lobe. Pulmonary edema and hypostasis. Chronic bronchitis and tracheitis. Chronic emphysema. Hydropericardium (100 cc.). Chronic esophagitis.

Ptosis of the transverse colon. Adhesions of liver and pyloric region of stomach, of spleen, transverse colon and omentum. Signs of former laparotomy and appendectomy (following statement about six weeks ago in Norfolk General Hospital). Scar of penis. Bilateral femoral hernia sacs.

Lundberg classified periarteritis nodosa into four more frequently observed clinical types:

First: fever, leucocytosis, marked emaciation and chlorotic marasmus.

Second: Polyneuritis and polymyositic symptoms.

Third: renal symptoms.

Fourth: abdominal symptoms.

The first picture is the most common. The next in frequency are cases with abdominal symptoms. Our case belongs to this group. The testicle which, at the onset of the disease, became swollen, showed marked periarteritic changes microscopically. The lungs which dominated the clinical picture during the final stage of the disease showed merely a terminal bronchial pneumonia.

During the abdominal operation the interest of the surgeon (Dr. W. A. Porter) was aroused by the unusual finding of oily fluid in the abdominal cavity, which has not been described in previous cases of periarteritis nodosa. The low blood cholesterol content of 117.6 mg. per cent may be worthwhile mentioning in this connection. This oily fluid had disappeared at the time of the autopsy and the peritoneal cavity was void of fat. There are two observations in the literature concerning change of human fat into oil, both cases with formation of granulomata in the mesentery. (Fleischmann, *Arch. Klin. Chirg.*, 158: 672; 1930 and Korsh, J. J., *Zentralblatt f. Path.*, 71: 337; 1938.) In each case there was a previous history of rheumatic fever which may be of interest as periarteritis nodosa has been considered as belonging to the group of rheumatic or hyperergic diseases. The microscopic examination of the fat tissue in our case showed, not only the picture of serous atrophy which we see occasionally in emaciating diseases, but there was also a diffuse chronic inflammation of the adipose tissue which was infiltrated by lymphocytes and, partly, by plasma cells. One could designate these changes as a generalized chronic panniculitis with serous atrophy. Since Kusmaul's and Mayer's first description of the disease in 1866, slightly over 30 cases were diagnosed during life and, of these, little more than a dozen were detected clinically without the help of the pathologist. Nodules along the arteries of the skin were the most helpful guides to the correct diagnosis. Most other cases were considered to be trichiniasis, rheumatic fever, miliary tuberculosis, typhoid fever, "surgical abdomen", appendicitis or cholecystitis.

Dr. Hamman, when leading us through the confusing history of this case, did not forget to take into account the possibility of periarteritis nodosa.

Fortunately, the second case that Dr. Whitehill selected seems to be much simpler than the first. The clinical records are as follows:

CASE 2.—M.W., a 26-year-old single colored female, was admitted to the Norfolk General Hospital on May 1, 1941, and died on May 15, 1941. The patient stated that she had been in good health until three

months before admission. At that time she began to have sharp substernal pains accompanied by a choking sensation and a sensation of rapid heart action. These attacks increased in frequency and duration, and at the time of admission lasted as long as several hours at a time. On occasions, following an attack, there was some swelling of the ankles. The patient's past health had been good. She had had pneumonia in childhood and the usual childhood diseases. She had not had joint pains, scarlet fever, diphtheria, or blood treatments. Her family history was non-contributory.

On admission her temperature was 96.8, pulse 135, blood pressure 98 systolic and 58 diastolic, and respirations 44. She presented the appearance of a fairly well developed and nourished colored female, lying quietly in bed and not acutely ill. The examination of the eyes, ears, nose and throat was normal. The pupils reacted to light and accommodation. There were several carious teeth. The tonsils were enlarged. There was some distention of the veins of the neck. The lungs were clear to percussion and auscultation. The heart was enlarged to the left. The heart sounds were of poor quality; the rate was rapid; there was a gallop rhythm at the apex. The point of maximal impulse was not palable. There were no murmurs. There was no accentuation of the heart sounds. There was no friction rub. No masses or viscera were palpable in the abdomen and there was no tenderness. The extremities were negative. There was no edema. The neurological examination was not remarkable. The hemoglobin was 84 per cent, the red blood cell count was 4,310,000 and the white blood cell count 8,000 with a normal differential count. The urine showed a specific gravity of 1.015, a trace of albumen, no sugar, and one or two pus cells. The first Wassermann test was anti-complementary, but a subsequent test was positive and the Laughlen test was positive.

During her stay in the hospital the patient's temperature was normal and subnormal. On one occasion it rose to 101. The pulse varied between 80 and 120 and the respirations between 20 and 30. On May 2nd an electrocardiogram showed a rate of 107, a PR interval of .17, a QRS interval of .07, and a normal sinus rhythm. There was left ventricular preponderance. The T waves were isoelectric in Lead I, diphasic in Leads 2 and 3, and inverted in Lead 4. The impression was that the tracing showed sinus tachycardia and some evidences of myocardial damage. Fluoroscopy of the chest showed that the lung fields were clear. The heart shadow was greatly enlarged to the left. Right sided enlargement was only moderate in extent. The cardiac pulsations were forceful, both on the right and left, but the aortic and pulmonary conus pulsations were not. The retrocardiac area was encroached upon by the hypertrophied cardiac shadow. On May 8th the venous pressure was 139 mm. of saline and on May 14th it was 165 mm. The patient continued to have spells of dyspnoea and tachycardia while at rest in bed. With them she complained of substernal choking. On May 3, 1941, there was heard a loud musical sound over the entire precordium. It varied somewhat with respiration and position. Its exact significance was not determined but it was thought to be a pericardial friction rub. Because there was some history of poor dietary habits the patient was given thiamin hydrochloride, 60 mgm. intravenously for several days. At first it was believed that there was some improvement but it was found that this was only temporary and the medicine was stopped. She was also treated with quinidine sulfate. On May 15th during a spell of dyspnoea and rapid heart action the patient suddenly expired.

DR. HAMMAN'S DISCUSSION

It is clear enough that this patient suffered from heart failure. In attempting to diagnose the disease of the heart to which failure is due I have found it helpful to begin the analysis by deciding into which of six groups of heart disease the case belongs. The six groups are valvular heart disease, hypertension in the general circulation, hypertension in the pulmonary circulation, pericardial disease, congenital defects, and myocardial disease. In the case that now demands our attention, it is plain that it must have been disease of the myocardium for there is no evidence of valvular disease, of hypertension in the general or pulmonary circulation, and pericardial disease or of a congenital defect. Perhaps we should pause to consider pericardial disease because during the last few days of life a peculiar musical sound was heard over the heart which some observers considered to be a pericardial friction. From the description of the sound one is justified in doubting the diagnosis of pericarditis for certainly this is not the description of a pericardial friction. Moreover, should the post-mortem examination unexpectedly demonstrate that the patient did have pericarditis then I am sure the pericarditis will prove to have been a terminal complication and not the cause of the heart failure. Therefore we may safely assume that myocardial disease underlay the heart failure and it will be our problem to decide upon the nature of the myocardial disease. However, before attacking that problem we will pause to consider certain prominent clinical symptoms that were present because the explanation of the pathological physiology of these symptoms will have a critical bearing upon our decision as to the nature of the myocardial disease.

It has not escaped your attention that during this patient's illness the most prominent, the most srikking symptom was pain, recurring attacks of severe

pain about the heart, and that the patient died not slowly of heart failure but suddenly during one of the attacks of pain. These striking symptoms are the characteristic symptoms of disturbance of the coronary blood flow, the disturbance being caused by a mechanical obstruction of the coronary arteries. This obstruction, so plainly indicated, must be due to arteriosclerosis of the coronary arteries or to syphilitic aortitis sealing over the mouths of the coronary arteries. All the evidence favors the view that the patient had syphilitic aortitis with partial occlusion of the mouths of the coronary arteries. The positive Wassermann reaction demonstrates that the patient had syphilis and her age, 26 years, makes it altogether unlikely that she had extensive sclerosis of the coronary arteries.

If we accept the diagnosis of syphilitic aortitis encroaching upon the mouths of the coronary arteries then the problem of deciding upon the nature of the myocardial disease is a relatively simple one. The changes in the heart muscle must be due to interference with the coronary blood flow, leading to death of muscle fibres by lack of nourishment and oxygen, or to syphilitic myocarditis, or to a combination of these two. It is unusual in syphilitic aortitis, when there is no aortic insufficiency, to find the heart greatly enlarged. As the mouths of the coronary arteries are encroached upon the sealing over of the orifice proceeds very slowly, allowing sufficient time for an abundant collateral circulation to develop so that if at the end one artery becomes completely occluded a large myocardial infarct is not produced. Dilatation and hypertrophy of the walls of the heart may occur without there being a large infarct when many muscle fibres degenerate and die for want of sufficient nourishment and oxygen. However, as I have said, under these circumstances usually the heart does not become so large as it was in this patient. The size of the heart leads me to suggest that in addition to syphilitic aortitis encroaching upon the mouths of the coronary arteries there is also syphilitic myocarditis.

DR. L. J. MOTYCA, Norfolk General Hospital, Norfolk: A summary of the pertinent autopsy finding is as follows: The autopsy was restricted to the chest. The heart was much hypertrophied and dilated, the right side being more dilated than the left. The apex lay at the level of the seventh rib. The orifice of the right coronary artery was completely occluded by scar tissue. Distal to this point, the artery was patent and free of lesions. The left coronary artery was not remarkable. The wall of the left ventricle was slightly thickened and beefy red in color. It was softer than normal in places, and these areas were marked by hemorrhagic streaks. The wall of the left ventricle was thickened, but otherwise normal, both grossly and microscopically. A microscopic examination of the wall of the right ventricle revealed a separation of muscle fibers by streaks of blood. Near the endocardium, the fibers were swollen and frayed. Some of them were replaced by fibrous tissue in which there was a slight infiltration of lymphocytes. One of these foci was highly vascular. There was a typical thrombus attached to the endocardium. The hemorrhagic areas represent a very recent lesion, while the fibrous areas represent older ones. The valves of the heart were normal. The aortic ring had a circumference of 7 cm. The aorta was dilated above the ring and the intima was marked with typical luetic plaques. Microscopic sections revealed a heavy infiltration of lymphocytes in the adventitia, degenerative foci in the media, and lesser changes in the intima. Both lungs were congested and edematous.

Anatomical and Microscopic Diagnosis: Cardiac hypertrophy and dilatation; syphilitic aortitis; occlusion of the orifice of the right coronary artery; early infarction of the right ventricle; small mural thrombus of the right ventricle; pulmonary congestion and edema, and fibrous pleural adhesions.

THE NEURO-SURGICAL MANAGEMENT OF EPILEPSY*

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INTRODUCTION

The term "epilepsy" is no more a diagnosis than are the words headache or vertigo, i.e., it is merely a symptom of disease and may be due to many different causes. The neurological surgeon in dealing with the problem of convulsions is particularly concerned with patients who have generalized or localized (Jacksonian) convulsions usually associated with loss of consciousness. The majority of patients with convulsions do not have a surgical

*Amplification of a paper read before the Surgical Section at the annual meeting of the Medical Society of Virginia, Virginia Beach, October 8, 1941.

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lesion, but there remains a certain significant group who do have organic disease of the brain of one type or another that is susceptible of operative attack, and it is with this group that we are especially concerned in this discussion.

As stated by Spurling,[1] "With the introduction of pneumo-encephalography by Dandy in 1919, the study and treatment of organic cerebral disorders received a tremendous impetus." We believe that every patient who has convulsions should be subjected to an encephalogram (if there are no signs of increased intracranial pressure), or to a ventriculogram if there are evidences of such pressure. In many patients, without an air injection, it is impossible to state (1) whether or not a *surgical* lesion is causing the convulsions, or, (2) exactly where in the brain such a lesion is located, as the cases to be cited will demonstrate. In the epileptic patients in whom air injections show no *surgical* lesion, dehydration, anti-convulsant drugs, and, when indicated, a subsequent air injection, are the best and accepted methods of management.

There are six major causes of surgical epilepsy:

Fig. 1.—Case I (Congenital). Encephalogram demonstrating a porencephalic cyst (arrows) communicating with the right lateral ventricle and deflecting the entire ventricular system toward the right side.

(a) congenital, (b) neoplastic, (c) inflammatory, (d) post-traumatic, (e) vascular, and (f) degenerative brain lesions. Examples** of each type will be given.

(a) *Congenital:* (1) F. C., a seven-year-old white boy had had attacks of mental confusion with transient unconsciousness. Convulsions had occurred at the time of birth. An encephalogram showed a large right cerebral porencephalic cyst communicating with the ventricle and extending to the cortex (Fig. 1). At operation, the cyst was found in the right temporal lobe covered only by arachnoid. The cyst wall was excised together with a large adhesion holding it firmly to the under surface of the dura (Fig. 2). The child has since done very

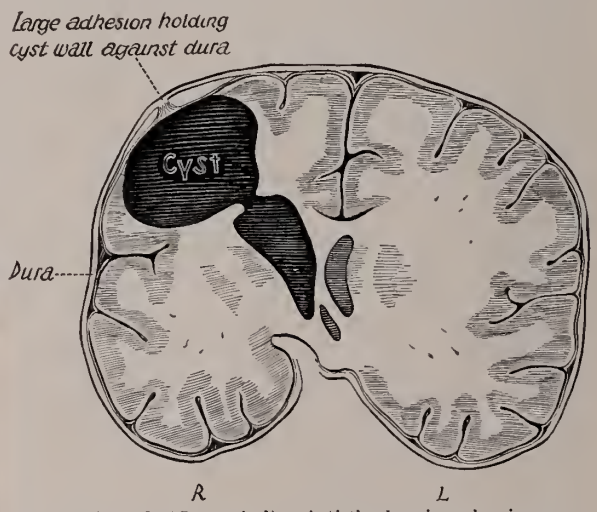

Fig. 2.—Case I (Congenital). Artist's drawing showing, particularly, the large dural adhesion holding the cyst (which communicated directly with the ventricle) tightly against the under surface of the dura, undoubtedly producing undue traction on the brain with resultant convulsive seizures.

well with no convulsions occurring in the three years that have elapsed since operation.

(2) D. S., a sixteen-year-old white boy, had had generalized convulsions for one and a half years before admission, chiefly on the left side. The left hand had been weak since the age of three months. Examination disclosed a spastic weakness of the left side of the body with an ankle clonus and a positive Babinski sign on that side. An encephalogram showed that the right lateral ventricle was deflected (by traction) toward the surface of the right cerebral hemisphere (Fig. 3.) At operation, there was definite over-vascularization of the entire

**All the cases cited in this paper were treated in the Department of Neurological Surgery at the University of Virginia, Charlottesville, during the writer's tenure at that institution (1937-41).

right cerebral hemisphere and a large subarachnoid cyst (not directly connecting with the ventricle, but filled with fluid and overlying a considerable portion of the right temporal lobe) was disclosed. The cyst was evacuated and excised, and the patient has since been free of convulsions, about twenty-five months having elapsed since operation.

Fig. 3.—Case 2 (Congenital). Encephalogram demonstrating the enlarged right lateral ventricle (arrows). At operation, the subarachnoid cyst was not communicating with this ventricle.

(b) *Neoplastic:* (1) C. S., a sixty-nine-year-old white woman, complained of tingling of the left side of the face and hand for two years together with left-sided convulsions for four years before admission. Examination showed complete astereognosis of the left hand with a slight left lower facial weakness. The optic disks were normal. A ventriculogram (because of the patient's age rather than an encephalogram as might have been done in a younger patient) showed a marked shift of the ventricular system to the left side consistent with a right temporo-parietal glioma (Fig. 4). Immediate operation disclosed a solid glioblastoma (Dr. C. R. Tuthill) in the right temporo-parietal region which was subtotally removed. Post-operative x-ray therapy was given, and the patient has since been free of convulsions so far as is known (ten months after operation), except for two light seizures which occurred while x-ray treatment was being given during her post-operative convalescence in the hospital.

Fig. 4.—Case I (Neoplastic). Ventriculogram demonstrating marked displacement of the ventricular system to the left side by a right cerebral glioma which caused left sided (Jacksonian) convulsions.

(2) C. S.,* a fourteen-year-old white boy, had had ten convulsions during a period of ten months before admission, beginning on the right side of the body, then becoming generalized and associated with unconsciousness. He had severe morning vomiting with frontal headache together with transient diplopia and blurred vision. Examination showed a high degree of bilateral choked disks (five to six diopters of choking) and slight weakness of the right hand. A ventriculogram showed a tremendous shift of the ventricular system toward the right side, and immediate craniotomy disclosed a large cyst occupying a considerable portion of the left cerebral

*This case was briefly referred to by the writer in a previous paper (Unusual Tumors of the Brain, etc.) *Virginia Medical Monthly*, 68:319-29. June, 1941 (Footnote of Case IV).

hemisphere on the superior surface of which was a tumor nodule (Fig. 5), diagnosed (Dr. C. R. Tuthill) as a malignant type of meningioma apparently arising from the vessels of the leptomeninges, although the morphological characteristics of the tumor cells also resembled those seen in fibro-sarcoma of the meninges. The patient has since remained free of convulsions, twenty-five months after operation, no post-operative x-ray therapy having been given to date. The optic disks are now normal.

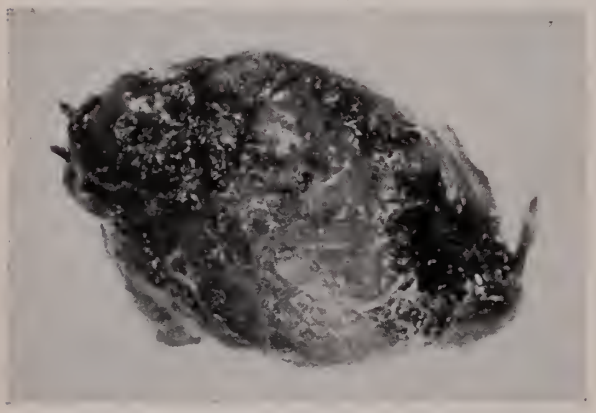

Fig. 5.—Case 2. (Neoplastic). Photograph of the actual tumor nodule removed from the large left cerebral cyst. The nodule weighed 1.51 grams, and the measurements were 2x1x5x1 cms.

(c) *Inflammatory:* (1) R. R., an eighteen-year-old white boy, complained of severe headache for one week before admission associated with grand mal seizures. There was a history of severe sinus disease for three years previous to admission. On examination, the pulse was fifty-six per minute, and the patient was very stuporous. The optic disks were hazy in outline. There was a positive Babinski sign on the left side. At operation a large right frontal lobe abscess was encountered and drained, from which a staphyl. albus hem. was cultured. A gutta percha drain was left in situ for three weeks and sulfanilamide* administered. The patient recovered and has since been free of convulsions for two years after operation.

(2) L. C., a nineteen-year-old white girl, had had left-sided convulsive seizures associated with unconsciousness for thirteen years before admission, beginning three years after a severe attack of meningitis at the age of three years, during which the child was quite ill with a temperature of 105°-106°. An encephalogram showed an obliterative arachnoiditis involving the right cerebral hemisphere with no shift of the ventricular system (Fig. 6). A right-sided craniotomy was performed. The brain appeared very firm, resembling one that had been hardened in formalin. The arachnoid was very adherent to the underlying cortex except for an occasional pocket of fluid in the sulci. These pockets of fluid were opened widely, and a moderate-sized decompression incorporated in the bone flap. The patient has since improved both with respect to the number and the severity of the convulsions during a thirty-month period after operation, but they have continued at intervals and a cortical ablation of a portion of the right motor or pre-motor area may be necessary to effect a cure.

Fig. 6.—Case 2 (Inflammatory). Encephalogram showing very little air (arrows) in the subarachnoid spaces over the right cerebral hemisphere (obliterative arachnoiditis), undoubtedly caused by the severe meningitis which had occurred sixteen years before the air injection was performed, resulting in left sided convulsions.

(d) *Post-traumatic:* (1) J. R., a white man, aged twenty-nine, complained of numbness and involuntary movements of the left arm for two weeks before admission, occasionally associated with unconsciousness. Six years before admission he had

*Sulfadiazine was not available at the time this patient was treated and would now be the drug of choice for staphylococcic infections of the brain.

been struck on the right side of the head by a policeman, sustaining a depressed fractured skull. Operation elsewhere resulted in a skull defect in the right temporal region. A few days before onset of the left-sided seizures, he had received another blow over the right frontal region near the old decompression. An encephalogram showed an enlarged right lateral ventricle with a very slight shift of the entire ventricular system toward the right side (Fig. 7). At operation, the old decompression

Fig. 7.—Case I (Post-Traumatic). Encephalogram demonstrating the enlarged right lateral ventricle (arrows) with very slight deflection of the ventricular system toward the right side due to traction by a right fronto-temporal (cerebral) scar.

in the right fronto-temporal region was enlarged, and a dense scar was dissected out from the right cerebral hemisphere extending down to the wall of the right lateral ventricle (Fig. 8), but it was not necessary to open the ventricle itself. The patient has since been free of all seizures, almost three years having elapsed since operation.

(2) E. B.,* a thirty-one-year-old white man, had

*This case has been previously reported in greater detail by the writer in describing an operative procedure for certain post-traumatic and post-inflammatory lesions of the brain causing epilepsy (*Southern Surgeon*, 9:86-95, February, 1940).

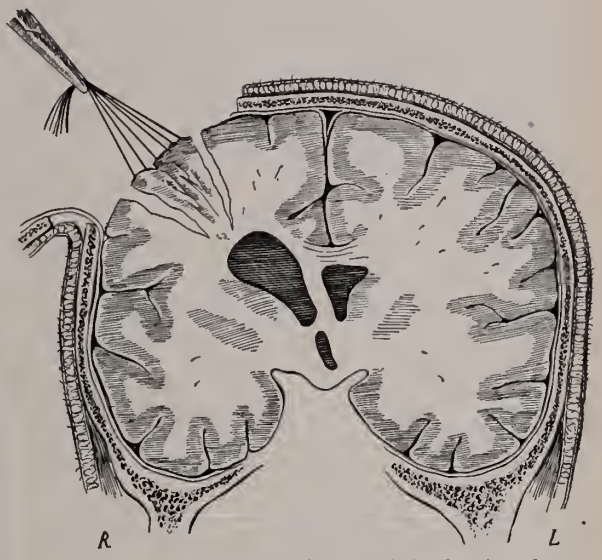

Fig. 8.—Case I (Post-Traumatic). Artist's drawing demonstrating mobilization of the right cerebral scar preliminary to excision. The scar extended almost to the right lateral ventricle.

had several entirely generalized convulsions at least once or twice monthly for twenty-eight months before admission (in spite of large daily doses of anticonvulsant drugs), beginning for the first time two years after a severe brain injury at which time he was unconscious for at least eight hours and bled

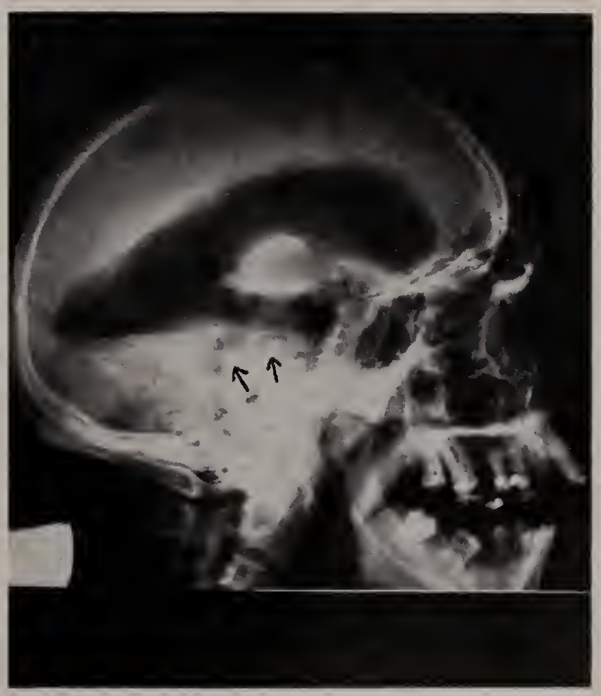

Fig. 9.—Case 2 (Post-Traumatic). Encephalogram demonstrating marked enlargement of the entire ventricular system with very little air in the basilar cisternae, especially the posterior group (arrows).

from the right ear (basilar skull fracture). Two encephalograms after the convulsions developed had shown marked enlargement of the ventricular system (Fig. 9) with very little air in the basilar cisternae, i.e., internal hydrocephalus and basilar (obliterative) arachnoiditis. On the supposition that the creation of a direct stoma between the ventricular system and the cortical subarachnoid spaces—thus short-circuiting the flow of cerebro-spinal fluid around the blocked basilar cisternae, together with an excision of the choroid plexus in the lateral ventricle (to reduce the amount of cerebro-spinal fluid formed) utilized for the stoma—would reduce or eliminate the convulsions, such a procedure was carried out (Fig. 10), and the patient has since been

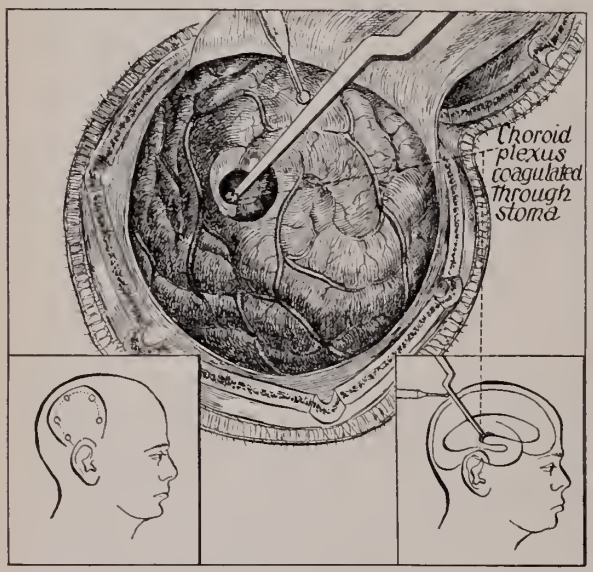

Fig. 10.—Case 2 (Post-Traumatic). Artist's sketch of the operation performed. This consisted of the formation of a stoma which directly connected the right cerebral cortex and the right lateral ventricle together with an electrocoagulation of the choroid plexus in that ventricle, resulting in complete elimination of the convulsions in this patient, to date. No anti-convulsant drugs are required.

entirely free of all convulsions for three years without the use of anti-convulsant drugs. He works daily in the coal mines in a neighboring state.

(e) *Vascular:* (1) R. F., a white boy, aged eleven years, complained of monthly left-sided convulsions for three years before admission, beginning suddenly while swimming. Examination showed marked spastic weakness of the left side with no signs of increased intracranial pressure. X-ray films of the skull showed heavy venous markings throughout, especially in the right parieto-frontal region near the midline (Fig. 11), consistent with a diagnosis of angioma. At operation, a large venous angioma, almost completely covering the cortex (Fig. 12) was found overlying the right motor area, and a number of the peripheral vessels were coagulated with the electro-surgical apparatus. X-ray therapy was given post-operatively. Only a single convulsion has occurred in the more than three years that have elapsed since operation.

Fig. 11.—Case 1 (Vascular). Right lateral X-ray film of the skull demonstrating, especially, the erosion of the entire thickness of the skull (arrows) at the site of the venous angioma causing Jacksonian convulsions of the left side of the body.

(2) J. S., a thirty-nine-year-old white man, had had convulsions at intervals for five years. A few days before admission he began to have very severe left-sided seizures which, the day before operation, occurred every five to ten minutes, involving only the left arm and face. The spinal fluid pressure was 230 mm. of water, and the spinal fluid was definitely xanthrochromic. A right subtemporal decompression was performed as an emergency procedure one night, and a venous angioma found involving especially the temporal lobe and extending into and over the surface of the right frontal lobe as well. Furthermore, when the dura was opened, rather bright red fluid was encountered; undoubtedly quite recent subarachnoid and subdural bleed-

ing had occurred from the angioma, thus accounting for the very frequent left-sided seizures. All bleeding points on the cortex were controlled with the electro-surgical apparatus, warm saline solution irrigations and muscle implants. The patient has since been free of convulsions during a twenty-one-month period after operation, being able to resume his work as a machinist.

Fig. 12.—Case 1 (Vascular). Artist's drawing of the operative appearance of the venous angioma covering the greater portion of the right cerebral hemisphere to such an extent that cortex was scarcely visible. The larger vessels were coagulated and post-operative X-ray therapy administered, resulting in practically complete subsidence of the convulsions to date.

(f) *Degenerative:* (1) C. S., a white man, aged fifty-two, had generalized convulsions for two years before admission, beginning on the left side of the body. There were no signs of increased intracranial pressure; the blood pressure was 105/70. There was a questionably positive Babinski sign on the left side. A ventriculogram showed that the lateral ventricles were well filled, with the right one somewhat larger than the left and possibly deflected somewhat to the right (Fig. 13). It was concluded that the patient had degenerative cerebral disease (secondary to a previous thrombosis) of the right cerebral hemisphere with subsequent right ventricular enlargement and no further operation was carried out. Efforts to determine (by letters) whether the patient has had any further convulsions, since the ventriculogram was done fifteen months ago, were unavailing at the time of writing.

Fig. 13.—Case I (Degenerative). Ventriculogram demonstrating the rounded enlargement of the right lateral ventricle (arrows) which characteristically follows a previous cerebral thrombosis on the same side of the brain, resulting, in this case, in left-sided convulsions, closely resembling (clinically) those due to a tumor or other mass lesion.

The Value of Electro-Encephalography in the Diagnosis of Patients with Surgical Lesions of the Brain Causing Convulsions

As the Drs. Gibbs and Lennox[2] have shown, convulsions are associated with paroxysmal cerebral dysrhythmia. Through the illuminating work of Berger, it has been demonstrated that many epileptogenic lesions, tumors, and certain psychoses will produce characteristic abnormal waves in the electro-encephalogram. Such a case has been recorded by Goldensohn, Marmor, and Myer[3] who successfully localized a cerebral cyst by electro-encephalography alone; after operation, the epileptogenic focus had disappeared in the electro-encephalogram, and no further seizures had occurred up to the time of their report.

For the last few years, electro-encephalograms have been performed on a considerable number of the neuro-surgical patients and on an even larger number of neuro-psychiatric patients at the University of Virginia Hospital (Charlottesville) by Dr. C. G. Holland, Jr., now of Philadelphia, but for the last few years a member of the Department of Neuro-Psychiatry at the University of Virginia. He has kindly permitted us to quote from his present views on this important subject;[4] in the main, they correspond to the writer's own opinion concerning the value of the electro-encephalogram to the neuro-surgeon:

The electro-encephalogram will practically always localize a *cortical* lesion, whether it is above or below the tentorium, but it will not show whether it is of *surgical significance* or not, i.e., it is just as apt to show abnormal waves overlying cerebral softening and gliosis due to a cerebral thrombosis as it will with tumor. It repeatedly has localized cerebellar and cerebral tumors for us in doubtful cases (as to clinical localization) with disappearance of the electro-encephalographic focus after operation. The electro-encephalogram frequently fails to localize *subcortical* tumors or other mass lesions below the cortex wherever they may be in the brain. An electro-encephalographic focus demonstrated in a patient with *generalized* convulsions (in whom a pneumo-encephalogram fails to show a significant lesion) will usually prove to be of little importance if operation is carried out over the suspected site (as demonstrated by the electro-encephalogram) and only indifferent post-operative results are to be expected in such cases, particularly with respect to the subsequent elimination of the convulsions, unless quite radical procedures, such as an ablation of the motor cortex, are performed. As emphasized by Dr. Holland, the electro-encephalogram is only one of the many diagnostic aids to be used in the investigation of epileptic patients, and is, in no manner, to be considered a substitute for the all-important air injections which are almost invariably carried out before operation in patients with convulsive disorders. (Occasionally, in the individual case, the convulsions are so localized or the plain x-ray films may show a lesion so logically situated that pre-operative air injection is unnecessary).

SUMMARY

(1) There are six major causes of surgical epilepsy. Examples of each are given together with the operative findings and the post-operative results.

(2) A brief note is added concerning the value of the electro-encephalogram in the localization and diagnosis of the essential lesion in any individual case of epilepsy.

N. B. The writer wishes to acknowledge the aid of the Department of Roentgenology at the University of Virginia (Dr. V. W. Archer, Director) in the interpretation of the X-ray films of the cases reported in this paper.

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3. Goldensohn, L. N., Marmor, Judah, and Myer, B. C.: Pneumo-Encephalographic and Electro-Encephalographic Localization of Epileptogenic Focus. *Jour. Amer. Med. Assn.,* 114:1345, April 6, 1940.
4. Personal Communication to the writer from Dr. Holland (September 26, 1941).

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DISCUSSION

DR. C. C. COLEMAN, Richmond: A great deal more could be said about the surgical treatment of epilepsy or convulsions than it was possible for Dr. Meredith to say in the length of time he had at his disposal. Something, of course, should be said against many of the surgical procedures which have been advocated for the cure of epilepsy from time to time but which have been proved completely useless.

Dr. Meredith's paper shows that in adults, particularly, one must be on the lookout for a localized lesion which is responsible for convulsions. This is the theme of the paper. The appearance of convulsions in adults without a definite history indicating a cause for such attacks, requires that the patient be studied for the possibility of brain tumor. Careful neurological examination usually with ventriculography or encephalography should be carried out.

We have had a large number of cases of convulsions in children and in the investigation of these cases we have usually made encephalographic studies. I must say that the number of surgical lesions disclosed in children with convulsions is exceedingly small and the routine use of encephalography for disclosure of such lesions would hardly be justified. However, I think encephalography in such cases is very important for one particular reason. Parents of children with convulsions are rarely satisfied with opinions based on clinical study alone. They may go from clinic to clinic in a futile quest for relief of the convulsions. With the combination of clinical and encephalographic study it is possible to demonstrate precisely a localized lesion when such is present or to exclude the presence of a surgical lesion. It is

very important to be able in these cases to speak with all the available information, and to do this encephalography is usually required.

DR. D. C. WILSON, University: Dr. Meredith's paper was enjoyed by us all. Certainly it was an excellent presentation of the subject; his classification is quite good and results splendid.

The problem of epilepsy is a very large one and there are many other points of interest besides the strictly neurosurgical one. In the Neurological Department of the University of Virginia Hospital we are especially interested in the idiopathic or habitual epilepsy, which is a much greater group than the post-traumatic or those with definite surgical lesions. We are, therefore, especially interested in the new type of surgical venturing into the idiopathic field. Penfield and Forster have localized certain epileptogenic areas in the cortex by studying the aura, by studying the scars in traumatic cases, and by means of an electric needle have mapped off from the cortex foci for different types of convulsions. By means of this diagram an attack can be studied; then the cortex exposed, electric stimulus applied to the area of cortex which responds to the attack, and then if an identical attack is produced the surface of the cortex can be removed. This has given gratifying results in some few cases. With Dr. Meredith's permission, I am going to demonstrate with a movie this procedure.

This subject, a girl, had whooping cough which was followed by continuous petit mal convulsions. Everything was tried with no avail; air injection showed no abnormality, but there was a definite aura. We then did an electroencephalogram and found a focus somewhere near the expected source of such an aura. Cortex was then exposed and a portion removed, as shown in the movies.

DR. MEREDITH, closing the discussion: I want to thank the discussers for their interesting and helpful comments. The points that Dr. Coleman has made are very well taken. When adults develop convulsions of the generalized or of the Jacksonian type, it is best to assume, especially if the patient is thirty years of age or older, that a mass lesion of the brain (tumor, cyst, abscess, etc.) is present until or unless it has been rigidly excluded by an encephalogram or ventriculogram, depending upon whether or not there are clinical signs of increased intracranial pressure present, the encephalographic procedure being reserved, in our clinic, for those patients in whom such signs (of increased pressure) are absent. On the other hand, the majority of cases of convulsions in *children* are not of surgical significance, but air injection should always be done in such individuals also, fairly soon after the convulsions develop, rather than to proceed with dehydration and medicinal therapy for a long period of time when a surgical lesion may possibly be the cause of the seizures. Every additional convulsion that a patient has, at whatever age, makes the case that much harder to cure, even though a completely removable mass lesion is eventually demonstrated and surgically eradicated.

Dr. Coleman also referred to the problem of the prevention of convulsions from a surgical standpoint which is a very important subject. Eugenically, as well, it has been shown by the Drs. Gibbs and others, by means of the electroencephalogram in parents, that it can be predicted in a great many instances which couples' children will, quite possibly, develop convulsions later on in life. With a husband or wife, or both, perhaps not having convulsions themselves, yet have fairly close relatives who do have them, the wisdom of such a couple having children is open to serious question. These latter statements, of course, refer chiefly to the so-called "idiopathic" type of convulsions (epilepsy) occurring in children, and not, usually, of surgical significance.

Dr. Wilson mentioned the work of Dr. Penfield and Dr. Forster and showed an interesting motion picture of an operation in a child with convulsions operated upon by Dr. W. G. Crutchfield. This also served to emphasize that, even though an air injection may not demonstrate any significant surgical lesion, there may be *selected* cases in which, it is hoped, *cortical ablation* (the cerebral location of which having been determined both by the clinical epileptic pattern and the electro-encephalographic tracings) will eliminate or greatly reduce the severity and (or) the number of convulsions.

OUR HEALTH, YESTERDAY AND TODAY

A Study of Acute Otitis Media and Mastoiditis and Their Relation to Public Health*

JOHN F. WOODWARD, JR., B.S., M.D.,
New York City.

Were all men built from the same pattern so that they responded to physical agents or bacterial infection in regular fashion, the practice of medicine would be a simple business. Human beings, however, are like contrary women of whom the comedian sang: "You never saw two alike any one time and never saw one alike twice."[15]

This variability of individuals is a vital factor in the comparison of our health today with that of two or three decades ago. Interesting as it may

*Presented before the Norfolk County Medical Society, Norfolk, Va., January 12, 1942.

be, a true scientific comparison is not possible. Nevertheless, we have certain data that may help us in our ever searching efforts to improve our health.

Heredity and environment play important roles. In environment we include all external circumstances, both physical and social. Climate, age, time or season, sex, occupation, habits, diet, allergies, general physical condition, response to treatment, geography and economical status are all important. They must be carried in the background of any discussion regarding the trend of various diseases.

The individual response to diseases, in the field of otolaryngology, presents many variable points in relation to the above facts. Acute otitis media and mastoiditis are practically always secondary infections. They are dependent upon a primary infection of the upper respiratory tract. There is usually present a preceding systemic infection from which there are local manifestations in the rhinopharynx. The source of the infection lies in the blood and lymph channels of the adjacent mucosa, the true origin of the infection being the mucosa of the upper respiratory tract.[9] I hope a comparison of these infections with their related primary infectors and the numerous factors involved, may lead us to some conclusions as to the trend of our health.

Let us review briefly the bacteriology of acute otitis media and mastoiditis. Altman's[1] report on 1555 cases of mastoiditis in persons up to 30 years of age, was 81 per cent of streptococcus hemolyticus. The percentage of different organisms present may vary in different localities, both in this country and throughout the world. "Taylor, at Jacksonville, has the impression that the bacteriology of the east coast of Florida is similar to that of the North. Brown reports 66 per cent streptococcus in mastoiditis in Atlanta. Colemore, of San Juan, reports that the predominating organism in upper respiratory infections in Puerto Rico is a staphylococcus."[7] The predominating organism is generally the streptococcus, with the pneumococcus and the staphylococcus following pretty closely.

Figure 1, by Fowler,[7] shows these differences clearly. However, in considering the different percentages, it is necessary to remember that the higher percentage of hemolytic streptococci were found in cultures of the mastoid cavity, as compared with those of Page and Fowler in New York City, taken from acute ears.

PERCENTAGE OF DIFFERENT ORGANISMS IN OTITIS MEDIA AS GIVEN BY VARIOUS AUTHORS

	Hæm. strep.	*Other strep.*	*Pneumo. III*	*Other pneumo.*	*Staph. (all)*	*Others*	*No. growth*
Vaheri, Helsinki, Finland, 1932-6, 200 acute mastoids	68.5	0.5	24.0	3.0	1.5	2.5	--
Altmann, Vienna, Austria, 1926-34, 1,457 acute mastoids	66.2	--	18.7	10.9	--	4.2	--
Kreutz and Witter, Detroit, 1926-36, 300 acute mastoids	63.0	8.0	5.0	2.0	9.0	4.0	9.0
Inutsuka and Kumami, Japan, 1914-35, 414 acute mastoids	30.1	18.5	21.4	10.7	2.6	17.7	--
Wirth, Heidelberg, Germany, 211 acute ears	44.4	1.8	20.0	19.9	7.7	6.2	--
Dunlap, Peiping, China, 1920-5, 488 unclassified	34.7	4.2	0.8	0.5	33.5	26.3	--
*Fowler, New York City, 1933-9, 2,755 acute ears	33.6	2.7	6.4	11.1	36.7	9.5	--
Page, New York City, 1933-4, 836 acute ears	30.1	2.1	13.9	0.3	22.4	7.9	23.3

Figure 1.

Three times as many mastoidectomies follow spontaneous rupture of the tympanic membrane as follow myringotomy, according to Page[13]. Remembering this, Figure 2 shows a graph made from the

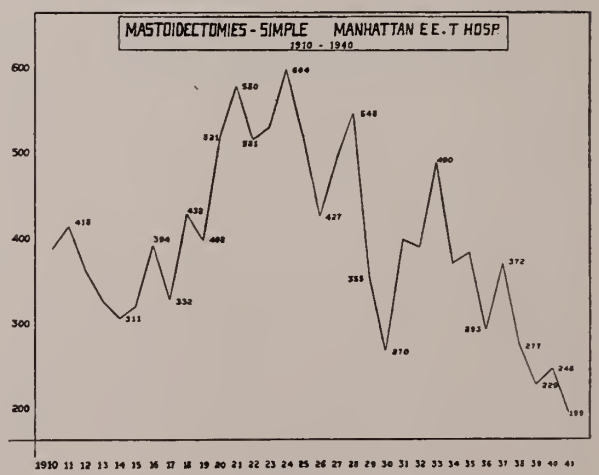

Figure 2.

acute simple primary mastoidectomies performed at Manhattan Eye, Ear and Throat Hospital from 1910 through 1941.

A glance at the graph over this period shows many

high and low points, with the all time high occurring in 1924 and the low in 1941. Dividing the graph into 10 year periods shows the largest number performed during the second decade from 1920 through 1930, with a considerable drop from 1928 to 1930. A similar fall may be noted beginning in 1937. This was the year that chemotherapy appeared on our professional horizon. Are these points significant? What causes these yearly changes? Bear this graph in mind for I shall try to answer these questions later.

Now, in Figure 3 we see the number of myringo-

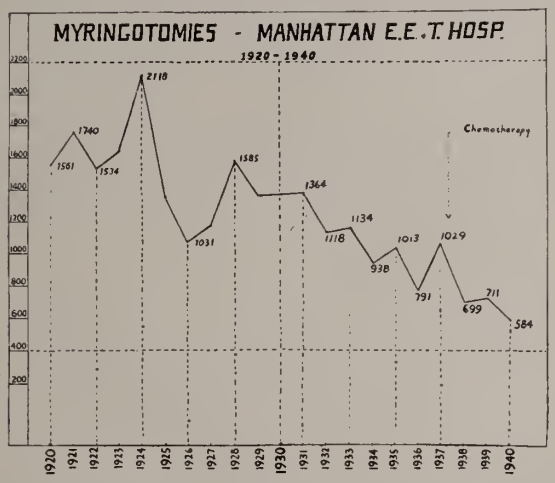

Figure 3.

tomies performed over a twenty year period. Here the high point occurred in 1924, with a more gradual falling off to the low in 1940. Let us superimpose these two graphs as may be seen in Figure 4. Here

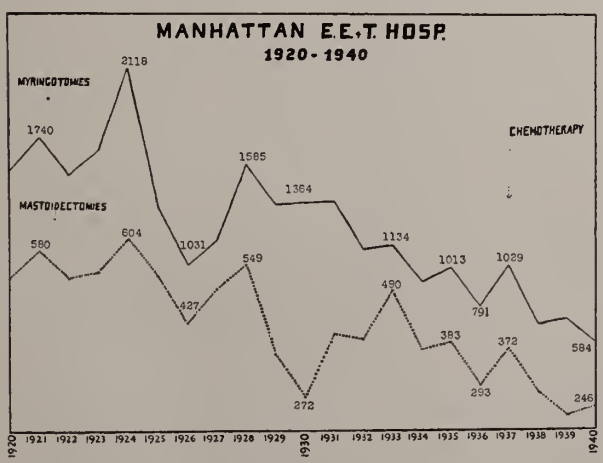

Figure 4.

the scale of the mastoid graph has been increased proportionately in order to bring out more clearly the peaks. It is easy to see at a glance that the two graphs follow closely, with the high point occurring in 1924 and the low in 1940. They do not follow in 1929 and 1930, but the trend from 1920 through 1940 seems to run about the same.

These graphs are from one special hospital in one section of the country. It should be interesting to examine what has been occurring throughout the United States. Figure 5, from the study by Corya,

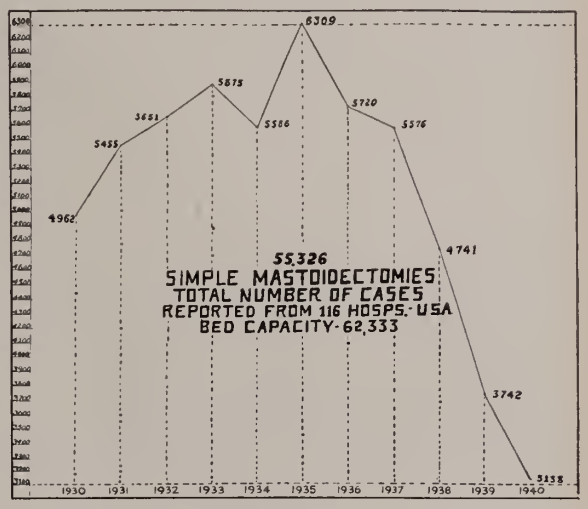

Figure 5.

shows a graph of 55,326 simple mastoidectomies reported from 116 hospitals covering an eleven year period. This composite picture represents cases from the New York Metropolitan area, the New England States, the Middle Atlantic States, the Southern States, the Middle Western States, the Pacific and the Rocky Mountain States. Although there are naturally variances from year to year, the general trend seems similar to the previous picture with a more pronounced drop beginning in 1935 to a low again in 1940.

I repeat, acute middle ears and mastoiditis are secondary infections, dependent upon the numerous diseases of the upper respiratory tract. Then let us look at some of these diseases for a possible cause.

It has been estimated that eight million cases of eight diseases—measles and rubella, chicken pox and small pox, diphtheria and scarlet fever, mumps and whooping cough—occur in the United States yearly.[19] The average American at 20 years of age has had at least three of these infections and there are approximately 48 million children in the United States. Add to this cases of acute colds, influenza

and pneumonia, in all age groups, and we find an appalling number of primary infectors.

We know that measles is due to a filtrable virus. The complications, which affect chiefly the upper respiratory tract, are secondary infections. However, acute otitis media preceding the onset of measles presents an entirely different clinical picture from that seen following this disease.

Figure 6 shows the incidence of measles in New

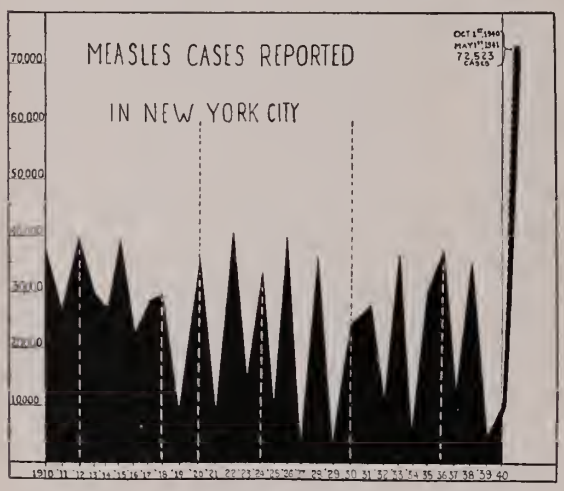

Figure 6.

York City from 1910 to 1940. This disease runs definitely in 2-3 year cycles. Our all time high in mastoidectomies at Manhattan occurred in 1924. This was a rising year for measles, but there are other higher points. And when we reached our low in acute ears in 1940, look what happened to the measles from October, 1940, to October, 1941, an all time high of 72,523 cases. Obviously, we can not blame the incidence of measles for our trend in mastoidectomies.

The incidence of acute purulent otitis media in cases of scarlet fever may vary greatly. The younger the scarlet fever patient the more apt he is to have ear complications. Otitis appearing at the onset of this disease is more dangerous than that occurring during the convalescent period. Mesrin[12] reported 4,660 cases of scarlet fever in which 905, or 19 per cent, presented purulent otitis media; of these, 79 required mastoidectomies, or less than 2 per cent.

Figure 7 represents the incidence of scarlet fever in New York City from 1920 to 1940. Here we see a fairly steady incidence of this disease with various peak years in 1921-1927-1935 and 1940. Again, we find that our rise and fall of mastoidectomies does

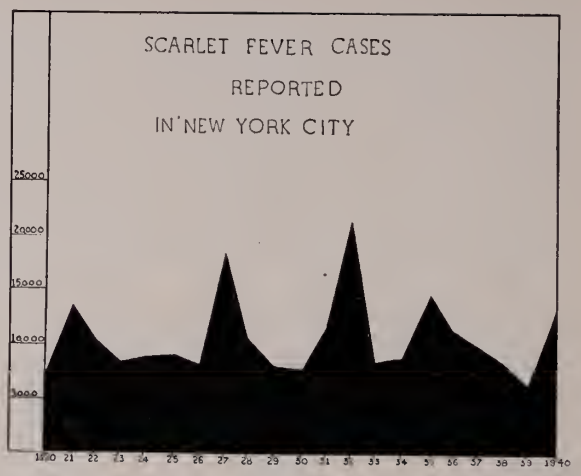

Figure 7.

not follow too closely the incidence of this disease.

Otitis complicating influenza presents a typical clinical entity. The fluid within the middle ear and mastoid cavity is hemorrhagic in character and only at the last is it frankly purulent. Statistics vary as to the severity of this type of lesion. However, early recognition and prompt intervention are essential. It is interesting to note that Roussel and Deyme[16] recommend injections of 10 cc. of the patient's own blood as a preventive measure in epidemics among soldiers.

In Figure 8 we have an influenza graph from

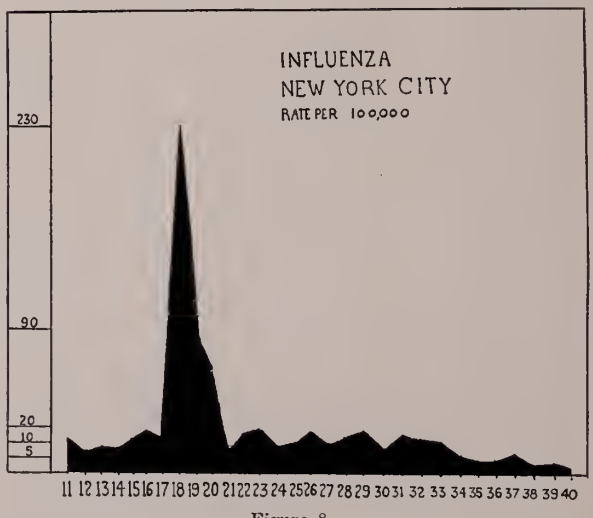

Figure 8.

1911 through 1940. This graph has been taken from the death rate rather than the incidence of this disease. The incidence of this disease, although a reportable disease, is quite inaccurate. The peak year of influenza in 1918 does not seem to have

caused any marked change in the number of acute ears. Notice, however, that following this appalling epidemic was the high water mark in mastoidectomies. What bearing does this have on the trend?

In Figure 9 you see the graph of pneumonia,

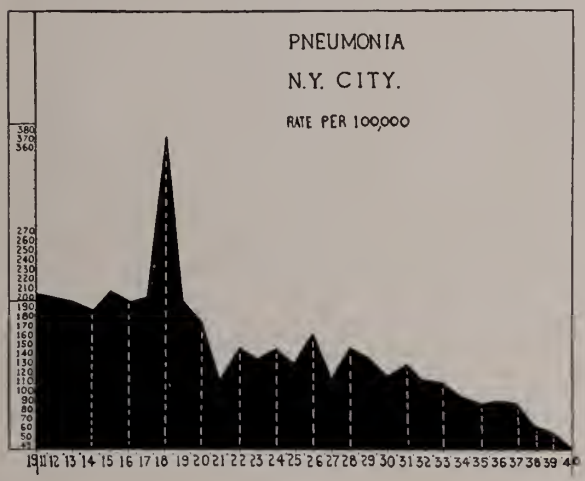

Figure 9.

taken from the death rate. This follows closely the influenza graph with the peak year again occurring in 1918. Pneumonia may in a way represent a composite of other graphs since it is so often a complication of upper respiratory diseases.

Influenza and pneumonia played havoc in 1918. Although they have subsided considerably in the past twenty years, we still find them creeping out from year to year. Influenza may break out in New York and Boston simultaneously, being mild in one city and severe in the other. Like the common cold it has little respect for geography or anything else.

Trask and Berg, from the Department of Health in New Haven, wrote, "Perhaps the severity of some of these diseases is not what it used to be. I feel quite positive that scarlet fever is not the same disease now as it was a few decades ago."

At the Willard Parker Hospital for contagious diseases in New York City, the mortality from 1932-1941 for scarlet fever dropped from 1.5 per cent to .08 per cent in 1940 and with no deaths up to October, 1941; for measles, from 1.7 per cent to .2 per cent; for whooping cough 5.3 per cent to 1.2 per cent, and the total service mortality from 2.7 per cent to .4 per cent.

It is not possible to correlate with any degree of certainty the mastoid or middle ear graph with the incidence of any of these diseases. It is true that during certain years, the connection between middle ear infections and certain upper respiratory conditions is closely related. However, examined over a period of years, we find this is not true.

Then let us find whether the prevalence of these diseases parallels the mastoidectomies. Yes they do—by taking the death rate of all existing contagious and upper respiratory diseases during each month of each year.

Figure 10 shows this relation for the years 1939

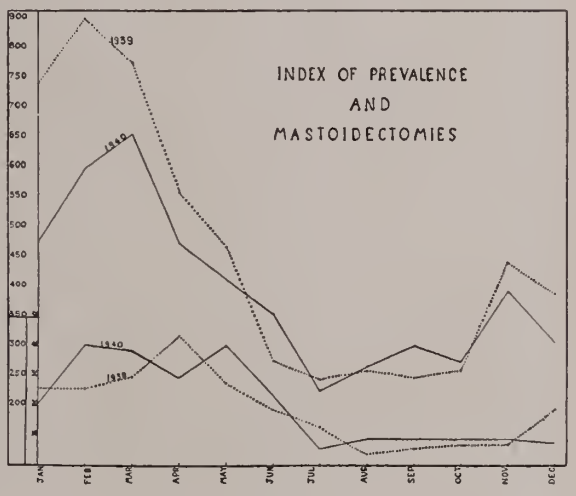

Figure 10.

and 1940 and it may be clearly seen that the two graphs follow. The upper lines represent the death rates and the lower lines the mastoidectomies. Then we can say that our mastoidectomies will follow the prevalence of all upper respiratory infections.

I thought once that with the contagious diseases being ever better controlled that we otolaryngologists might find ourselves mastoidless. Perhaps we have the old common cold to thank for the fact that we can struggle with otitis media a while longer.

In relation to otitis media and mastoiditis, the nasopharynx is *the* important structure. It is the junction or meeting place of the ears, the sinuses and the upper respiratory tract. Too much emphasis cannot be placed on this important area. Cullom[5] shows that there is an incidence of 85-99 per cent involvement of the sinuses present in infections of the middle ear. Campbell[3] found sinusitis present in 100 per cent in 130 patients with broncho- and lobar pneumonia. Fowler, in his study of deafness in children, found associated disease of the sinuses in 91 per cent. Childs' study of 383 cases of scarlet fever found involvement of the sinuses diagnosed by x-ray in 91 per cent.[18] Ashley[2] summarizes this con-

dition: the predisposing factors are anatomic malformations, allergy, glandular dysfunctions and poor hygiene. The existing causes are acute infections of the upper respiratory tract, acute exanthems, swimming and contact with infected persons. Russell[17] says that allergy may be in some cases merely a hypersensitive state of a mucosa previously damaged by infection. Pickworth[14] refers to the mutation of organisms as described by Dochez and others. These altered bacteria may be reactivated under certain conditions and lead to complications in patients long thought cured. Dean[6] places chief reliance on the removal of obstruction to ventilation and drainage.

The fact that since 1910, over 250,000 adenoidectomies and tonsillectomies have been performed at Manhattan Eye, Ear and Throat Hospital shows the importance attached to these structures. Early attention with removal of obstructions and increasing ventilation may influence or prevent concurrent or subsequent infection of the ear. Crowe places great importance on the recurrence of adenoid tissue in early deafness among children.

The increased interest paid to examinations of school children, the referring of these children for treatment of sinuses and upper respiratory conditions, tonsil and adenoid operations, and improvement in their general condition, has undoubtedly helped to prevent or relieve middle ear infections.

We know that the majority of cases of otitis media and mastoiditis occur in the younger age group. Figure 11 shows our aging population[20], this being

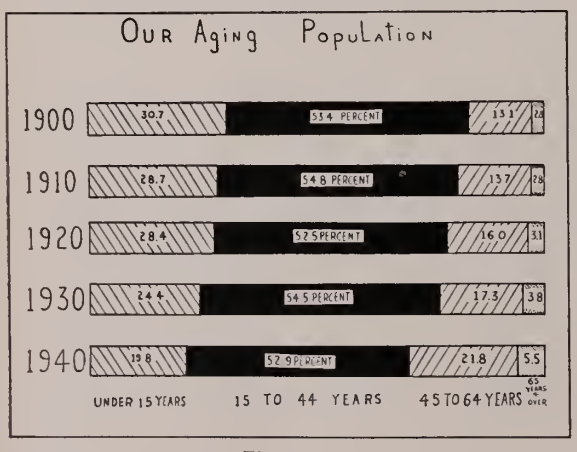

Figure 11.

a fair analysis of the entire country. We find that there has been a gradual decrease in individuals under 15 years of age, from 30.7 per cent in 1900 to 19.8 per cent in 1940. In the age group from 15-44 years there was a slight drop from 53.4 per cent to 52.9 per cent. However, in the age group between 45 and 64 years, we find an increase from 13.1 per cent to 21.8 per cent and an increase in the age group of 65 and over from 2.8 per cent to 5.5 per cent. Knowing that the majority of middle ear infections occur during the early years of life, then it is easy to see that this fact may aid us in our discussion.

Another factor in the decline of otitis media and mastoiditis is one that I should like to avoid. Please believe me when I say that I do not work for any cereal companies and it's nobody's business what I eat for breakfast, but I do believe in these much-advertised vitamins. I believe that vitamin A is necessary to maintain the nutrition of the nasal, aural and tracheal epithelia and that it may decrease the incidence and duration of colds.[8] Vitamin B deficiency produces a definite nasal syndrome, consisting of a post-nasal discharge and the posterior tips of the middle turbinates are smooth, moist, creamy white and slightly thickened.[4] If our diets could be perfect for each individual, dosing with vitamins would not be necessary. This unfortunately is not the case and in my treatment of the forerunners of mastoiditis, I have seen vitamins do a great deal of good and no harm.

Another and perhaps the greatest aid of all in lowering the incidence of mastoidectomies appeared in 1937—the advent of chemotherapy. Perrin Long points out that about 75 per cent of bacterial infections now respond to chemotherapy, a notable exception being the common cold.

Otitis media may be aborted in its early stages under adequate sulfonamide therapy, but, due to the masking of signs and symptoms, we do not advocate it until a myringotomy has been performed and a culture taken. Early myringotomy is essential.

Law,[11] roentgenologist at Manhattan, has pointed out the definite fact that once absorption or breaking down of bone occurs in the mastoid cells, chemotherapy is of doubtful benefit. Frank pus or necrosis, especially within a bony cavity, must be drained.

"Another point which needs emphasis is the fact that these drugs are insidious in their ability to mask symptoms of bone involvement until dire complications have set in. In fact, roentgenological evidence may be completely lacking in cases of severe mastoiditis, which, when administration of the drug is

stopped, assumes its classic form both clinically and roentgenologically."[21]

Figure 12 illustrates this fact. This was a patient

Fig. 12.—Left—X-Ray of mastoid under sulfanilamide. Right—X-Ray of same mastoid four days after discontinuing drug. (Courtesy of Dr. F. M. Law).

23 years of age with acute primary mastoiditis and partial facial paralysis. Under chemotherapy he showed no pain and only slight temperature, but no change in the character of the discharge or facial paralysis. X-ray picture, on left, shows cell outlines with early evidence of bone absorption. Chemotherapy was discontinued and picture on right, taken four days later, shows complete breaking down of mastoid cells. A simple mastoidectomy was performed that day, followed by complete recovery of mastoid condition and facial complication.

Since the advent of chemotherapy the percentage of recoveries of patients with lateral sinus thrombosis at Manhattan has doubled.[10] Meningitis cases have recovered which before would have been fatal.

The general principles to be followed in using chemotherapy in otitis media and mastoiditis are: 1. Correct diagnosis; 2. Isolate the organism; 3. Give sufficient dosage and do not discontinue too quickly; 4. Watch for masking of signs and symptoms or bad effects of the drug; 5. Remember that chemotherapy does not replace surgery. It still seems preferable to me to do a safe simple mastoidectomy early, rather than wait too long on surgery or chemotherapy, and retain a certain degree of loss of hearing in the ear. 6. Each case presents a different problem. Above all do not dwell in a state of false security that all is well until you are sure.

In summarizing, we find that throughout the United States acute simple primary mastoidectomies have dropped to an all time low. This drop started before the advent of chemotherapy and can not be attributed solely to that drug. As a means of therapy the sulfonamides have proved to be a powerful weapon. Their greatest field lies in the complications of middle ear infections, cutting down the mortality to a miraculous degree. The incidence of contagious diseases and upper respiratory infections has apparently not decreased. There has been, however:, a marked decrease in the severity and mortality of these conditions. The acute mastoidectomies follow the prevalance of these diseases and vary from year to year dependent upon the morbidity or virulence of the existing organisms. Heredity, environment, and the shift in age groups must be taken into consideration. The increased attention given to the health of school children, the referring of the children for prompt treatment of sinuses, early care of diseased adenoids and tonsils and an improvement in their general condition have undoubtedly helped to prevent and relieve middle ear infections.

The data that we now possess, the prevention of mortality and ill health and the medical weapons at our disposal make me certain that our health today is better than that of yesterday.

The Record Department of Manhattan Eye, Ear and Throat Hospital and The Department of Vital Statistics of New York City, under Dr. Charles Bolduan, have given valuable assistance in the preparation of this paper.

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REGIONAL ILEITIS
With Report of a Case*

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Regional ileitis is new only in the sense of its discovery. Like appendicitis, it has doubtless always been in existence. Appendicitis was put on the map as a clinical entity by Fitz, of Boston, in 1886, and regional ileitis by Crohn and his associates (Crohn, B. B., Ginzburg, L., and Oppenheimer, G. D.: Regional Ileitis; a Pathologic and Clinical Entity, *J. A. M. A.*, 99:1323, 1932). Cases of what was probably regional ileitis were reported as long ago as 1806 by Combe and Saunders before the Royal College of Physicians of London. It was also described by others, but the first thorough study of the disease with its symptoms, pathology and clinical course was made by Crohn and his associates in 1932. There has been no essential change in the description of the disease since their report.

However, the field of observation has been broadened. Thus it is now known that instead of being confined to the terminal ileum the disease, which is more properly called regional enteritis, may affect any portion of the small bowel up to, and occasionally including, the duodenum and may also involve the large bowel, particularly on the right side in conjunction with the ileum. But it still remains true that in the great majority of cases the terminal ileum is the most frequent site.

Little is known of its etiology. It was at first thought that some specific bacterium of bacillary dysentery, or even the bacillus of tuberculosis, was the etiological factor. This, however, has never been proved and it is now generally accepted that there is no specific bacterial cause for this disease. Whether it is from a virus is a matter of speculation; though it seems probable. While this disease is not caused by the tubercle bacillus, there may be giant cells present though the general structure of the tubercle is lacking. The giant cells resemble foreign body giant cells that are found in ulcerations of the bowel in which particles of fecal matter incite this reaction. The disease is a non-specific granulomatous ulcerative lesion beginning probably in the submucosa and infiltrating the submucosa and the mucosa with granulating and cicatrizing tissue. The mucosa becomes ulcerated, forming craters and gutters, and eventually it seems to atrophy (Crohn).

The disease, as has been mentioned, is usually located in the lower ileum. There may, however, be different regions affected and between them segments of healthy bowel. Crohn, Lewisohn, and others now apply the term "skip lesions" to the affected segments. The portion of healthy bowel between the diseased loops is designated as "skip areas".

The symptoms of regional ileitis in its acute stage are often confused with those of acute appendicitis from which it is difficult to differentiate. Pain, tenderness and usually a mass in the right lower quadrant of the abdomen occur, though muscle

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*Read at a meeting of the Richmond Academy of Medicine, Richmond, Virginia, January 13, 1942.

spasm is not so common as in acute appendicitis. These, with a high leucocyte count, simulate very closely acute appendicitis and frequently operation has been performed with that diagnosis. This stage may be recovered from by conservative or medical treatment, or the disease may go into a subacute or chronic stage with symptoms of diarrhea, possibly blood in the stools, and abdominal pain and discomfort. There may be fever, loss of weight, nausea and vomiting, and cramps.

In the first stage the bowel is swollen and infiltrated. The peritoneum is congested and may have small tubercular-like spots. On palpation it resembles a rubber hose. In the secondary, or chronic or subacute, stage the bowel is quite firm. There may be mild symptoms of obstruction, but, strange to say, there is rarely complete obstruction from this disease. Abcesses may form, but the pus is usually quite innocuous and does not have the foul odor of pus from an appendicular abscess. One very notable feature of the chronic stage is the formation of fistulas. The fistulas may be internal between adjoining loops of bowel, and particularly between the lower ileum and the sigmoid, or it may burrow through the perineum and appear as an anal fistula, or after an operation for appendicitis it may follow the course of the scar and appear as an abdominal fistula. This disease, as other ulcerative diseases of the bowel, usually occurs chiefly in the youth, particularly in the second and third decades.

One of the most important methods of diagnosis is a careful roentgenologic examination. This shows a more or less characteristic type of filling defect and string-like appearance of the affected region of the intestine. When, however, a fistula has formed and there is a history of appendicitis with diarrhea the diagnosis is fairly obvious.

In the early stages conservative treatment will often cure, and if a patient with regional enteritis is operated upon under the mistaken diagnosis of appendicitis and the appendix is not markedly involved, it would probably be better to close the abdomen without even removing the appendix, and try dietary and symptomatic medical treatment for at least a few weeks. The results may be checked not only by the patient's symptoms but by roentgenologic examination. If the patient does not improve, then operation should be performed. In the later stages when the disease is farther advanced, and particularly if there is a fistula, surgical operation is indicated. Formerly, resection was almost invariably performed. This was followed by a rather high mortality rate. A short-circuiting operation is now coming somewhat into favor, but the short-circuit must include not only lateral anastomosis but a division or obstruction of the bowel just distal to the anastomosis. A mere lateral anastomosis avails but little, because it permits much of the fecal matter to go over the diseased portion of the bowel and, consequently, affords no rest to the affected segment. When fistulas have formed, the indication usually is for resection of the bowel.

CASE REPORT

The following case brings out some of the points that have been discussed:

The patient, E. S., white, female, 17 years of age, was admitted to St. Elizabeth's Hospital on September 19, 1941, complaining of abdominal cramps and pain and a fecal fistula. She was well until August, 1939, when she had an attack of abdominal pain with nausea and vomiting. A diagnosis was made of "intestinal infection". In August, 1940, there was a recurrence of the symptoms and an appendectomy was done. The wound drained profusely for three weeks and then to a less extent until June, 1941, when an attempt was made to repair the draining sinus. During this time there had been a small amount of fecal drainage from

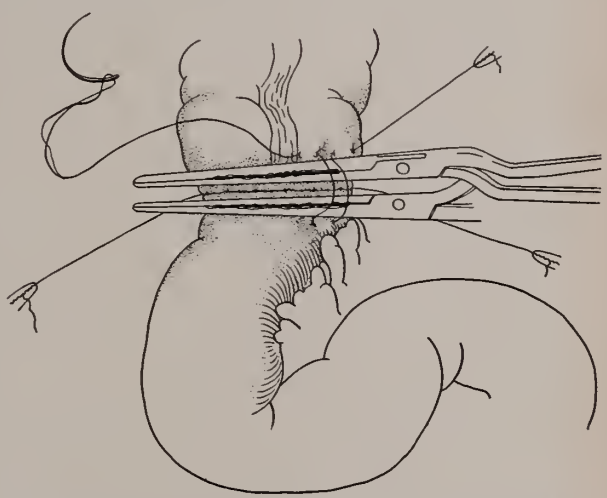

Fig. 1.—An outline of the technic of uniting the bowel after the resection. The clamped stump of the ileum is brought in apposition with the clamped stump of the ascending colon and the under surfaces are fastened together with a continuous basting suture of chromic catgut. Over the anterior surfaces is inserted a basting suture of the same material. Both basting sutures are then held taut while the clamps are removed. The two ends of the basting sutures are tied snugly together and the whole anastomosis is reinforced with a series of interrupted mattress sutures of fine chromic catgut.

Fig. 2.—A drawing of the specimen that has been opened. In the upper border is shown the fistulous tract with some surrounding skin. The whole specimen was removed in one block. The wall is greatly thickened and the caliber of the bowel is diminished. It is impossible to define accurately the limits of the cecum and ileum. Note the ulcer in the cecum and the ulcerated areas on the proximal side of the fistulous tract.

the sinus. In August, 1941, the fecal drainage increased, and about the first of September the patient was operated upon for "abscess". All of these operations had been done elsewhere. The fecal drainage continued and the patient complained of violent abdominal pain daily since the last operation.

Examination. The patient was poorly nourished and quite thin. She weighed 70 pounds. The abdomen was flat, with increased muscle tone. The liver and spleen could not be palpated. The heart and lungs were normal. In the midline above the pubis was a fecal fistula. The hemoglobin was 71%, r.b.c 3,900,000, temperature 98.6, pulse 108, respirations 28. X-ray examination with barium enema showed that the colon filled normally as far as the cecum. At that point there was an irregularity and changes which suggested a filling defect.

Operation. Operation was performed September 25, 1941. After packing the fistulous opening with a strip of iodoform gauze soaked in iodine solution, an incision was made around it. The peritoneal cavity was entered from above. The adhesions of the bowel to the abdominal wall were separated. The mass of tissue with the fistula was mobilized and the mesentery to the bowel that was to be excised was clamped and divided. The cecum was greatly distorted. There were many enlarged lymph nodes. The ileum well above the lesion and the ascending colon were doubly clamped and divided with the electric cautery. The two stumps were approximated and their under surfaces were united with a continuous basting suture of No. 0 chromic catgut. A similar suture was placed anteriorly and the sutures were drawn snugly while the clamps were removed (Fig. 1). The ends of the sutures were tied together and a series of interrupted mattress sutures of fine chromic catgut was placed around the anastomosis anteriorly and posteriorly. The long ends of the mattress sutures were passed through omentum and tied. Sulfanilamide was placed on the raw surface and in the peritoneal cavity. Through-and-through sutures of zytor were inserted in the abdominal wound, but were not tied. The peritoneum and posterior sheath of the rectus muscle with some of the adjacent tissues were brought together with a continuous suture of No. 0 chromic catgut. This was reinforced with a few interrupted sutures of the same material. No effort was made to close the skin. The wound was

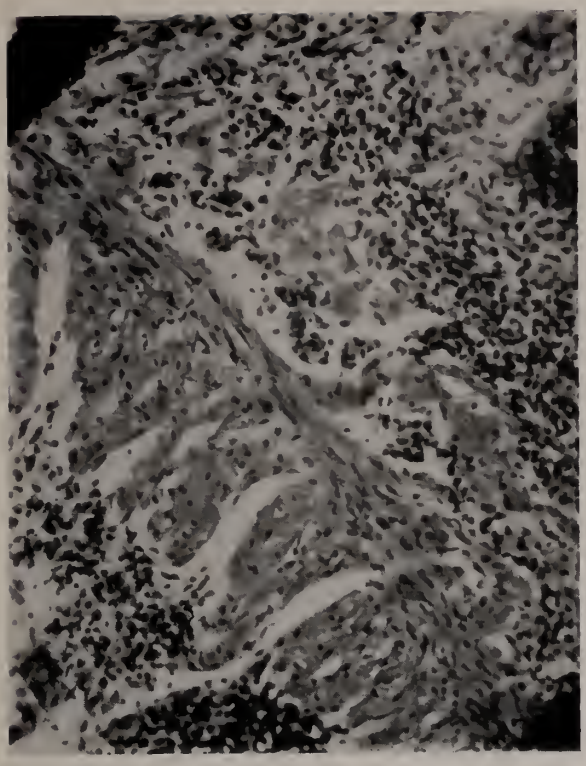

Fig. 3.—Photomicrograph of tissue from the interior surface of the specimen, showing some of the muscular coat and extensive leucocytic infiltration of the intestinal wall (x250).

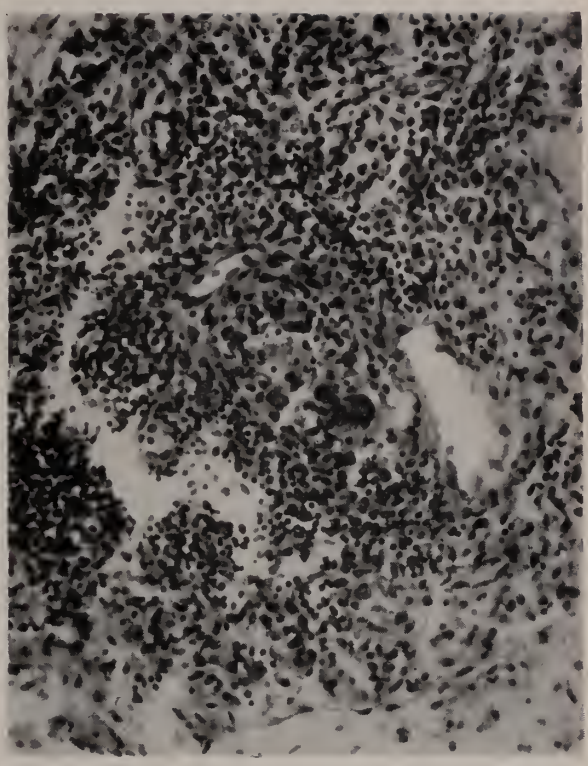

Fig. 4.—Photomicrograph of a deeper area of the specimen, showing leucocytic infiltration and giant cells (x250).

dusted with sulfanilamide and packed with vaseline gauze. She was transfused.

The Specimen. The specimen consists of the terminal ileum, cecum and some of the ascending colon. The portion of the ileum and cecum measures 55 cm. The cecum and ascending colon measure 12 cm. in length. In the attached mesentery are many enlarged lymph nodes. On section of one of them it is soft but not necrotic. It does not appear to be malignant or tuberculous. A block is taken of one of the lmyph nodes for permanent section. On the anterior surface of the specimen is a fistulous tract that has been dissected out intact, together with a small amount of surrounding skin. The terminal ileum and cecum formed a common tube. The whole wall is greatly thickened and the mucosa is converted into a granular ulcerated surface with some edematous patches of mucosa. Extending above the fistulous tract there is a superficial ulcerated area of the mucosa, most conspicuous on the mesenteric border of the ileum, which is an extension of the disease (Fig. 2). Above this the ileum appears to be normal, but from this point down to and including the cecum the disease seems to increase in intensity and inflammatory reaction infiltrates all of the bowel wall. At the distal end of the specimen is a segment of the colon about 5 cm. in length which appears to be normal. Microscopic examination shows intense leucocytic infiltration and granulation tissue. There is no evidence of malignancy (Figs. 3 and 4).

Subsequent Course. The patient suffered for the first ten days or two weeks from abdominal cramps. These gradually disappeared. She was given a second transfusion of blood October 2, 1941. The through-and-through zytor sutures were tied on October 6, 1941. The patient was discharged from the hospital on October 29, 1941. The wound had closed and she was feeling well.

A letter received on December 31, 1941, stated that she was in excellent condition.

CARCINOMA OF THE THYROID*

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On reviewing cases diagnosed as carcinoma of the thyroid at the University of Virginia Hospital between 1924 and 1941 the traditional difficulty in both pathological and clinical recognition was early noted. The present paper emphasizes this problem and presents data on twelve proven cases. A brief review of recent literature indicates the confusion of opinion still existing.

I. REVIEW OF THE LITERATURE

Pathological Diagnosis, Classification and Distribution. Wilson,[53] in 1921, reviewed the subject and listed twenty-three "principal tumor types". Graham[14] later called attention to the large percentage of sarcomas of the thyroid reported in the earlier literature and pointed out that this was undoubtedly due to mistakes in diagnosis. He also pointed out that one may find in a benign thyroid tumor a cell arrangement and development which when seen in other organs have been unquestionable evidences of malignancy, and, conversely, that metastasis and death may occur from a tumor whose microscopic appearance resembles normal thyroid. The failure to recognize this led to the contradictory terms "benign metastasizing goiter", "benign metastasis from a malignant primary tumor" and "malignant metastasis from a benign primary tumor".

Graham[12] cited as criteria for the diagnosis of thyroid malignancy "local invasion, recurrence (of the original tumor) after incomplete excision, metastasis, death of the patient due to the invasive character of the tumor", and added, in 1924, invasion of the blood vessels by the tumor. He pointed out that the latter is always found in certain types of malignancy and is not hard to discover. These criteria have been used in the review and reclassification of our series of tumors.

There have been many classifications of malignancies of the thyroid. The one proposed by Pemberton[36] is simple and adequate and affords a satisfactory pathological and clinical basis for discussion.

1. Papillary adenocarcinoma
2. Adenocarcinoma in fetal adenoma (malignant adenoma)
3. Diffuse adenocarcinoma
4. Epithelioma
5. Sarcoma.

Other authors include lymphosarcoma; Broders and Warren, however, think it is never primary in the thyroid.

The reported incidence of sarcoma of the thyroid has decreased with increasing knowledge of the disease, and Ewing[10] states that "the occurrence of true sarcoma (of the thyroid) in man still requires demonstration". Rienhoff,[42] on the other hand, lists five types of sarcoma arising in the thyroid. Sarcoma and lymphosarcoma are unquestionably very rare although a few apparently well authenticated cases have been reported.

The distribution according to types reported by various authors is shown in Table I and presents no significant variance. It should be noted that papillary adenocarcinoma and malignant adenoma are the least malignant types of thyroid cancer and that 70 to 80 per cent of all malignant tumors are of these two types.

From Table II it can be seen that there is little difference in the reported percentage of cases falling into the various grades of malignancy when grouped according to the Broders' grading of malignant tu-

*From the Department of Surgery and Gynecology, the University Hospital and the McIntyre Tumor Clinic of the University of Virginia.

Read at the annual meeting of the Medical Society of Virginia at Virginia Beach, October 6-8, 1941.

TABLE I—DISTRIBUTION OF THYROID TUMORS ACCORDING TO TYPE

	Papillary Adenocarcinoma	Malignant Adenoma	Diffuse Adenocarcinoma	Epithelioma	Other Types
Pemberton[36] 517 cases	30%	38%	30.4%	1.6%	
Portman[39] 200 cases	16.5%	54.8%	14.3%		14.4%
Watson and Pool[51] 167 cases	34%	42%[1]	18%[2]		6%

[1]This figure includes the "small alveolar large cell adenocarcinomas" and "unclassified adenocarcinomas".
[2]This figure includes the "spindle and giant cell carcinoma" and the "small round cell carcinoma".

TABLE II—DISTRIBUTION OF THYROID TUMORS ACCORDING TO GRADES OF MALIGNANCY

	Grade I	Grade II	Grade III	Grade IV
Pemberton[38]	29.6%	38.5%	14.5%	17.3%
Watson and Pool[51]	36.7%	30.0%	27.3%	6.0%

mors. By this method of classifying approximately 70 per cent also fall in the least malignant grades.

It would seem therefore that the prognosis in thyroid cancer should be favorable. This unfortunately is not true because many of the cases when seen are too far advanced for complete surgical excision and because nearly all thyroid tumors are radio-resistant.

Clinical Diagnosis. The fact that at least 50 per cent of malignant thyroid tumors are diagnosed by the pathologist without definite clinical evidence of malignancy indicates how difficult and unsatisfactory is the clinical diagnosis.

In the early stages there are no positive clinical diagnostic signs or symptoms. There is nearly always a tumor which has been present for some time although this may not be palpable if it is small and lies in the posterior part of the gland.

Thyroid malignancy is suspected because of a somewhat fixed, hard tumor of the thyroid; because of recent growth either slow or rapid, and because of secondary evidences of pressure such as difficulty in swallowing or breathing, and hoarseness. Metastasis to the regional nodes or distant metastasis may be the first clinical indication of malignancy.

When the diagnosis can be made clinically the prognosis is usually poor.

Carcinoma of the thyroid has to be differentiated from nodular goiter, acute and chronic thyroiditis, Hashimoto's disease and hemorrhage into a benign adenoma. This may be difficult and if there is any possibility of malignancy biopsy should be performed.

Incidence of Carcinoma of the Thyroid. It is difficult to arrive at an accurate estimate of the incidence of carcinoma of the thyroid. Schreiner and Murphy[44] report that in goitrous areas malignancies of the thyroid are five to eight times as frequent as in non-goitrous areas. This is not surprising when one considers that from 80 per cent to 98.8 per cent* of all thyroid carcinomas arise from a pre-existing nodule and that in goitrous areas the incidence of nodular goiter is very high.

Table III shows the incidence of thyroid malignancy to vary from 1 per cent to 8.8 per cent of cases of thyroid disease coming to surgery. The incidence is higher in patients with nodular goiter.

TABLE III—INCIDENCE OF THYROID MALIGNANCY

	Cases of Malignancy	Percentage of Thyroid Operations	Percentage of Nodular Goitre
Pemberton[37, 38]	774	2%	4.9%
Smith, Pool and Alcott[46]	54	2.5%	4.7%
Clute[3]	187	2.86%	
Hull[20]	9	1.7%	2% to 6%
Graham[12]	108	1% to 2%	
Kocher (cited by Haas[15])		6% to 8.8%	
Haas[15]		0.7%	
Schlessinger *et al*[43]			4.5%[1]

[1]Of 112 nodular glands examined at autopsy.

Sex. While all thyroid disease is five to seven times as frequent in women as in men, carcinoma of the thyroid occurs in a ratio of only 2.24 : 1, as is shown in Table IV.

TABLE IV—SEX INCIDENCE OF CARCINOMA OF THE THYROID

	Females	Males	Ratio
Pemberton[38]	492	282	1.74:1
Clute[2]	198	28	7:1
Watson and Pool[51]	117	50	2:1
Total	807	360	2.24:1

Age. The age incidence corresponds roughly to that of carcinoma situated elsewhere, that is, most of the cases occur in the fifth, sixth and seventh decades, although a number of cases have been reported in the first and second decades.[47, 22] In children, because of the greater risk of malignancy when nodules are present, Kennedy[22] advises strongly for their early removal.

HYPERTHYROIDISM

Table V shows the incidence of carcinoma of the thyroid and hyperthyroidism reported by several authors. Cases have been reported in which the primary tumor and the metastatic tumor have proved to have secretory power (Eiselberg, cited by Clute and Warren,[2] and Mills[33]). Suppression of thyroid activity with resultant myxedema has also been re-

*It is estimated by various authors[40, 3, 12, 31] that from 80 per cent to 98.8 per cent of all thyroid carcinomas arise in pre-existing nodular goiters and that from 2 per cent to 6 per cent of nodular goiters coming to operation are malignant.

TABLE V—INCIDENCE OF CARCINOMA OF THE THYROID AND HYPERTHYROIDISM

	Cases of Malignancy	Cases of Malignancy and Hyperthyroidism	Incidence
Pemberton[38]	774	10	1.3%
Coller[31]	99	1	1.0%
Clute and Warren[2]	226	4	1.8%
Total	1,099	15	1.4%

ported, and removal of the malignant tumor was followed by normal function of the remaining thyroid gland.

Carcinoma Arising in Aberrant Thyroid Tissue. There is a wide divergence of opinion as to the incidence of carcinoma in aberrant thyroid tissue. Moritz and Bayless[34] found that 2.8 per cent of carcinomas of the thyroid reported in the literature arose in aberrant thyroid tissue and that 28 per cent of the cases of aberrant thyroid tissue reported were malignant.

Hare and Swinton[16] and others from the Lahey Clinic[23, 24] state that 60 per cent of lateral aberrant thyroid tissue is or becomes malignant.

Broders (cited by Foss[11]), on the other hand, questions the origin of malignancy in aberrant thyroid tissue. Pemberton[36, 38] agrees with Broders and thinks that carcinomas found in these locations are deposits of malignant cells from a primary tumor of the thyroid gland.†

Crile[5, 6] is of the opinion that "tumors arising in lateral thyroid tissue are essentially benign" and are not metastases to cervical lymph nodes from malignant tumors of the thyroid gland. He thinks that their complete surgical removal will cure the patient.

To prove the origin of carcinoma in lateral aberrant thyroid tissue one must rule out the presence of a tumor in the thyroid gland and this may be impossible to do except at autopsy.

Treatment. The best results have been obtained by radical surgical excision of the tumor as advocated by Crile and Crile[4] and others,[23, 51] followed by large doses of x-ray or radium to the neck.

If only incomplete excision is possible, heavy doses of x-ray post-operatively have been followed by an increased period of comfort and length of life. When even partial excision is impossible, a biopsy should be done and the patient then given large doses of x-ray. Some patients will improve greatly and the tumor may regress sufficiently to allow excision later.[23]

When thyroid carcinoma is found outside the gland it is important to search for a primary lesion in the lobe of the gland on that side of the neck and to do a wide surgical excision of the cervical lymph nodes in addition to the removal of any tumors found in the thyroid gland. If no tumor is palpable in the gland it would seem wise to remove the entire lobe on the affected side for microscopic examination because it is well known that the primary tumor may escape detection on gross examination.

Probably the most important part of the treatment is the prophylactic removal of all thyroid nodules. The reasons for this are well summarized by Pemberton,[36] as follows:

"1. Carcinoma develops 80 per cent to 90 per cent of the time in pre-existing adenoma; therefore, the retention of adenoma entails a certain risk of carcinoma, though the extent of this risk cannot be accurately estimated.
"2. There is a low operative risk.
"3. These tumors rarely recur.
"4. One cannot say that any tumor is benign (50 per cent of the carcinomas are found in clinically benign tumors).
"5. The patient may develop hyperthyroidism or the increase in size of the tumor may demand its removal."

II. SUMMARY OF CASES SEEN AT THE UNIVERSITY OF VIRGINIA HOSPITAL

In reviewing the records of the University of Virginia Hospital, thirty-one cases were found in which the diagnosis of carcinoma of the thyroid was made or suspected either clinically or pathologically. Slides were available for study on twenty-six of these cases. Preceding a review of the records and preceding the follow-up, the slides were reviewed and on this basis alone the present histological diagnosis was made. The records were then reviewed and the

†"Malignancy of lateral aberrant thyroid tumors is always limited to a certain type, that is, papilliferous adenocarcinoma which . . . has a predilection for spreading by way of lymphatic structure or by direct implantation." And, "The frequency with which tumors are found to be associated with a similar type of malignancy of the thyroid gland proper and the fact that they are always in the same side of the neck as the malignancy of the thyroid are two further evidences in favor of their metastatic origin"[36].

TABLE VI—CASES SEEN AT THE UNIVERSITY OF VIRGINIA HOSPITAL

Group	No.	Original Diagnosis		Present Diagnosis
		Path.	Clin.	
I	12	Malignant 12	Malignant 10 Benign 2	Malignant 12
II	11	Malignant 11	Benign 11	Benign 11
III	5	None	Malignant 5	Malignant 3 Benign 2
IV	3	Benign 3	Malignant 3	Benign 3

patients were followed up as completely as possible.

From the above study only twelve of the twenty-six cases are called carcinoma and fourteen are considered benign.

The follow-up of the whole series suggests the accuracy of the recent pathological review. The two groups will be presented separately.

Cases of Proven Carcinoma of the Thyroid, Group I, Table VI.

Of the twelve cases of cancer of the thyroid:

Five were papillary adenocarcinoma

Three were malignant adenoma

Four were diffuse adenocarcinoma

There were no cases of squamous carcinoma and none suggesting sarcoma or lymphosarcoma.

During the period 1924 to 1941 in which these cases were seen, 521 cases were operated upon for thyroid disease, giving an incidence of carcinoma of 2.3 per cent. There were three other cases in which the diagnosis may be assumed but in which no biopsy was done. If these are included the incidence becomes 2.9 per cent. There were nine females and three males. The ages of these patients varied from seventeen to seventy-five years. Three of the fifteen cases of carcinoma including three without biopsy were in colored patients, an incidence of 20 per cent. About 16 per cent of the patients admitted to the hospital during this time were colored. These figures for incidence in general agree with the figures developed in the larger series already discussed.

In three cases the diagnosis of carcinoma of lateral aberrant thyroid tissue was made. In two of these carcinoma was also found in the thyroid gland so that the so-called "aberrant" thyroid tissue is now thought to represent metastasis from a tumor in the thyroid. Both died of the disease. In the third case there is no record of the thyroid having been explored. This patient is well one year and four months later and shows no evidence of recurrence.

The clinical characteristics presented by the disease were as variable as the literature would indicate. The nodule in the thyroid had been noted for periods varying from one month to twenty years. In one case a metastatic nodule in the groin was noted three months before the appearance of the nodule in the thyroid.

Two cases had clinical hyperthyroidism and were operated on for this. Malignancy was not suspected clinically. There was an elevated basal metabolic rate in two others (plus 79 per cent and plus 60 per cent), which was probably due to respiratory obstruction. In four other cases where the basal metabolic rate was recorded it varied from minus 20 per cent to plus 1 per cent.

The treatment of these cases was equally divided into four groups. Three were treated with surgical excision alone; three had surgical excision followed by x-ray; three had biopsy followed by x-ray and three had biopsy only. Of those who had biopsy only, two had distant metastases when first seen and the third refused further treatment. The amount of x-radiation varied from 250(R) to 3000(R).

In no case was so radical an operation performed as is now advocated by Crile and Crile[4] and others[16, 51] and the amount of radiation has been less than is now recommended (Lahey, 6000(R), Portman, 2400(R), to each field, Memorial Hospital group 3000(R) to the affected side).

The results of treatment have been almost entirely unfavorable. Eight of the twelve cases are dead. Seven died of the disease and one of cardiac disease, the longest duration of life having been five years. One patient is alive and well one year

and four months later. The only patient who has survived more than five years is one whose tumor was of the most benign type and who received 1200(R) of x-radiation to each side of the neck post-operatively. Two were not traced.

Cases Originally Diagnosed Malignant Now Diagnosed Benign, Group II, Table VI.

In eleven cases the original pathological diagnosis of a malignant lesion was changed to benign by recent study. Only two of these cases were first seen within the last ten years, a fact which reflects our increased knowledge of the histological criteria in the diagnosis of thyroid cancer. All of these cases were treated by surgery.

Nine of these cases are alive and well from one to twenty-seven years (only one less than five years) after the original diagnosis was made although three have evidence of thyroid enlargement.

One died probably of carcinoma of the larynx six years after our diagnosis of carcinoma of the thyroid.‡ One was not traced. It is obvious that these results confirm the accuracy of the recent pathological study.

Clinical Diagnosis of Malignancy Without Biopsy, Group III.

In five cases of clinical diagnosis of cancer was made without biopsy. Three of these are now thought to have died of this disease, one is alive without evidence of cancer and the fifth died of tuberculosis. This apparent error in the clinical diagnosis in two of five cases emphasizes the importance of biopsy.

Discrepancies Between Clinical and Pathological Diagnoses.

The data in Table VI present the surprising fact that the clinical opinions expressed in the records differ in sixteen cases from the pathological diagnosis. A few of these differences may be due to carelessness of recording but the fact that any such differences occur is arresting and illustrates the confusion and uncertainty that underlies the diagnosis of carcinoma of the thyroid. In eleven instances, the clinicians were correct in the diagnosis of a lesion now considered benign when the pathologist diagnosed malignancy. (Group II, Table VI). The clinicians were wrong in five instances. In two cases now considered malignant (Group I, Table VI) the clinical diagnosis of a benign lesion was made in opposition to the pathologist's. In three instances the clinical diagnosis was malignant whereas the original and final pathological diagnosis is benign (Group IV, Table VI).† Most of these differences occurred during the early years covered by this study. During recent years as the accuracy of the pathological diagnosis has increased the clinicians are depending more and more completely on the pathologist's opinion.

‡This patient died at another hospital six years after the original diagnosis of carcinoma of the thyroid was made by us. She was treated in the meantime for carcinoma of the cervix and for carcinoma of the larynx. Since there is no evidence indicating carcinoma of the thyroid, she is thought to have died of carcinoma of the larynx.

SUMMARY AND CONCLUSIONS

In a review of the recent literature on carcinoma of the thyroid the following points are outstanding:

1. The clinical and pathological diagnosis of carcinoma of the thyroid is difficult.
2. Graham has established certain criteria for the accurate pathological diagnosis of carcinoma of the thyroid.
3. Radical surgical excision followed by intensive x-ray therapy has given the best results.
4. Aberrant thyroid carcinoma is probably always secondary to a primary thyroid tumor.
5. All nodules of the thyroid are potentially malignant and should be removed.

Twelve cases seen at the University of Virginia Hospital were found to be in agreement with the experience of others in this disease.

I am indebted to Dr. James R. Cash for his help in reviewing the slides and manuscript and to Dr. Edwin P. Lehman for his help and criticism.

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†These three cases are alive and well at three, four, and eighteen years later.

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A CASE REPORT OF CENTRAL NERVOUS SYSTEM SYMPTOMS ASSOCIATED WITH MEASLES IN AN ADULT*

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The following case was the last in a series of three similar cases seen this year. All three cases were seen during the local epidemic outbreak of measles in the spring and early summer of 1941. A feature of this epidemic was its wide age range of attack.

The case I wish to report is that of a white married male, 26 years of age, occupation waterman, referred by Doctor E. W. P. Downing. My first knowledge of the case was on the morning of July 22, 1941, when Doctor Downing discussed with me by telephone the condition of a patient whom he was treating at home for measles. The patient had lapsed into semi-consciousness and Doctor Downing wondered whether it was possible for him to have taken more phenobarbital than his instructions or the history could account for. A few hours later the hospital was requested to send the ambulance for the patient. I found out later that the hospital desk clerk understood the person calling to say it might be a case of diabetic coma but that Doctor Downing had called me about the case before. I go into this detail because I feel it shows the puzzling condition of the patient as clearly as does the history which follows.

The history, as taken from his wife and mother, revealed that he had developed measles ten days before. He had gotten along satisfactorily and had gone to a picture show in the evening four days before being admitted to the hospital. But three days before admission he had complained of feeling miserable and for approximately forty-eight hours before admission he had been sleepy, irrational, very sensitive when touched and unable to eat. He had had no medicine during the previous forty-eight hours and had only taken a grain and a half of phenobarbital once several nights before in order to sleep.

On examination he was found to be well-developed. There was a mottling flush, particularly over the face. This was not cyanotic but looked as though it might be vaso-motor in origin. He was especially hypersensitive and irrational, required bed rails, and it took four people to hold him when blood was taken from his arm. The nose and throat were moderately congested. Mouth condition indicated the lack of care of the past two days. Blood pressure on admission was 124/90, axillary temperature 98.2, pulse 108 and respiration 24. Rectal examination was impossible. The patient was totally irrational, wild-eyed when worked with and apparently in growing coma when not bothered or worked with.

Based on my impressions from the other two cases, the following orders were written: Neoprontosil, grains 15, by mouth every four hours con-

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Virginia Beach, December 3, 1941.

tinuously if he was able to take it, but, if not, he was to be given 20 cc. of a 2.5 per cent solution of neoprontosil subcutaneously or intramuscularly. The nurse on the case was pleasant and insistent and convinced that the oral medication could be given but, after several failures, was forced to start with subcutaneous medication. This first dose was given at 4:15 P. M., the patient having been admitted at 3 P. M. By this time the blood taken on admission had been reported to show hemoglobin-Sahli 100 per cent, R.B.C. 4,750,000, W.B.C. 16,400, P. 85 per cent, L. 15 per cent, smear normal, negative for malaria, coagulation time 4 minutes. A voided specimen of urine was not available and I decided not to attempt catheterization as Doctor Downing had examined a specimen several days before and found it negative.

Around 9 P. M., approximately six hours after admission, he seemed more rational. He complained of soreness in the chest and abdomen and coughed some. He was given codein, grains one, hypodermically. With encouragement he was able to take fluids by mouth through a rubber-tipped tube. At midnight, approximately nine hours after admission, he slowly took and retained 15 grains of neoprontosil by mouth. He had received only 40 cc. of the 2.5 per cent solution by subcutaneous injection before oral medication could be substituted.

The first specimen of urine was obtained eight hours after admission. It was voided, twenty-eight ounces, red due to the neoprontosil, hazy, acid, specific gravity 1.023, negative for albumin, sugar and diacetic acid, and the microscopic showed 2 to 4 pus per h.p.f. and an occasional r.b.c.

When seen at the next morning rounds, approximately 18 hours after admission, he was definitely improved, there was no skin discoloration but some cough and some general soreness. His blood pressure was 110/60.

His temperature reached a high of 100 degrees axillary the second day of admission and remained thereafter between 97 and 98 degrees axillary. The pulse varied between 60 and 80 except for the pulse of 108 on admission. The respiration varied between 16 and 20 except for the respiration of 24 when admitted.

Two days after admission, on July 24, 1941, his laboratory report was: hemoglobin 96 per cent, R.B.C. 4,700,000, W.B.C. 14,600, P. 81 per cent, L. 19 per cent. Blood agglutinations for typhoid fever, Para A and B, Malta fever, tularemia and typhus fever were negative. Blood Kahn was negative. Urinalysis: red, hazy, acid, specific gravity 1.015, albumin, sugar and diacetic acid negative. Microscopic showed 2 to 6 pus cells and 1 to 2 r.b.c. per h.p.f.

The rest of the patient's six-day hospital stay was uneventful. His whole management consisted of restraint as needed on admission, neoprontosil, 40 cc. of 2.5 per cent solution and 215 grains by mouth, codein, grains 1, hypodermically, a total of 4 grains of soluble phenobarbital hypodermically for restlessness, nose and mouth care, fluids by mouth as able to take, which could be given in small amounts approximately four hours after admission and by the second night summary reached 130 ounces per 24 hours, and soft diet beginning on the second night. The management of this case was based on impression and not on scientific data, and, as stated, on past experience with two other cases.

His blood culture, which was taken on admission before any medication was administered, was reported negative on August 2, 1941, eleven days after being taken.

When discharged from the hospital, he was advised to stay in bed at his home until seen by Doctor Downing. In following up the case, I found that he stayed around the house for a week, was out and around a week and then back to work, as directed by Doctor Downing, and, when I happened to see him several weeks later, he was perfectly well, was working daily and had no complaint.

No attempt will be made to report the other two similar cases, but a few points of interest will be given. The first case in this group was a white female, age 12, who was unconscious approximately 28 hours before admission to the hospital, this period benign characterized by absolute quietness when left alone and wild hyperactivity when worked with. This patient under the same management was unable to take fluids by mouth or show any rational movements until 33 hours after admission. This time interval is important to me as it offsets the seemingly too prompt improvement of the case reported in detail, but it is logical when one compares the conditions of the two patients on admission.

The second similar case was a white female 14 years of age, and in this case the outstanding difference was the marked peripheral circulatory failure which was present from the first and for which large doses of strychnine were given hypodermically.

The dose of neoprontosil solution 2.5 per cent used in all three cases was calculated on 1 cc. per pound body weight up to a maximum of 120 pounds weight.

In each of these cases it was felt that the condition of the patient was critical. None of these cases seemed to me to fit into the picture of a transient toxemia which, given time and nursing care, would get along satisfactorily. The risk of sulfonamide therapy was carefully weighed against the dangerous state of the patient and I felt its use was justified.

No attempt will be made to even theorize as to the possible action of the neoprontosil. If one contends that measles is due to a virus and this was a virus complication, any effect of sulfonamides on this particular virus would have to be established. If it is assumed that measles is a manifestation of a streptococcus infection, proof cannot be produced to support this contention either.

Finally, let me say that this case is reported because it interested me, and I hope it has you, but no effort is made to make this one small stone or all three small stones into any mountain of experience or evidence.

GASTRIC HYPOACIDITY*

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It seems feasible in this paper to designate the term "hypoacidity" to a finding of less than twenty five degrees of free hydrochloric acid after histamine stimulation. This term is used in contradistinction to "hyperacidity"; but due to the gravity of most cases that do not secrete any acid after histamine injection, it advisable to further classify.

The term "hypochlorhydria" is used to denote a decrease of free hydrochloric acid below twenty-five degrees after histamine injection and occurs in some neuroses, chronic gastritis, syphilis, early carcinoma of the stomach, sprue, secondary iron deficiency anemias, hepatic cirrhosis, pellagra, chronic pancreatitis, types of diarrheas, and in many varied conditions with general systemic depression, such as the menopause and hypotension.[1] Of one hundred cases of hyperthyroidism, S. A. Wilkinson found that thirty-six per cent had achlorhydria and the average acidity of all cases was reduced to slightly more than half the normal. After thyroidectomy, only ten and five-tenths per cent showed achlorhydria. The theory is offered that the depression of gastric acidity is a phenomenon of extreme symphathetic over-stimulation.[2]

The complete and persistent absence of free hydrochloric acid after histamine stimulation is termed "achlorhydria", or "achylia gastrica", and occurs in most cases of gastric cancer, far advanced gastritis, pellagra, some cases of hysteria, pulmonary tuberculosis, and is a constant and important symptom of primary pernicious anemia occurring often before the blood picture is diagnostic or during remissions when a diagnosis is difficult.

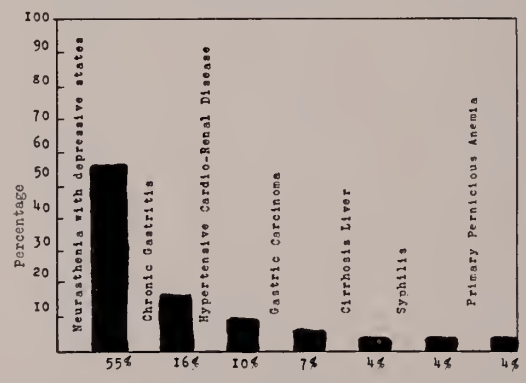

Fig. I.—The etiology of 62 cases of gastric hypoacidity. Neurasthenia with depression accounts for more than one-half of the cases. It is interesting to note that there are only two cases of complete achlorhydria present in the neurasthenics.

It has been learned from fractional analysis after histamine stimulation that a wide range of secretory variability may exist in the stomach contents of presumably healthy individuals. The finding of hypochlorhydria in persons suffering from few, if any, gastric symptoms, but who are of a neuras-

*Read before the Seaboard Medical Association of Virginia and North Carolina, at Virginia Beach, December 2-4, 1941.

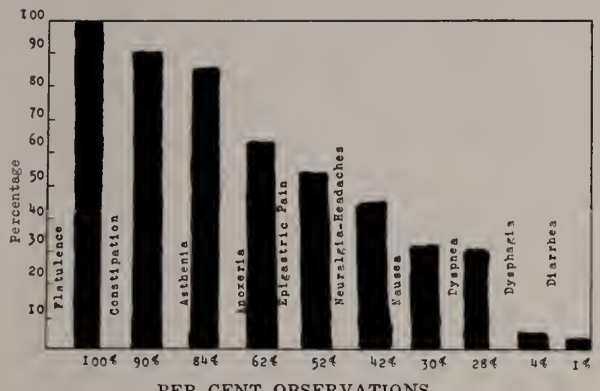

Fig. II.—The chief complaint associated with gastric hypoacidity in the study of 62 cases. Reveals how confusing the symptomatology may be in a patient's history.

thenic tendency, focuses the light upon hypochlorhydria as an extreme form of functional secretory disturbance.

The supposition that neurasthenia is characterized by hypoacidity curves is not fully sustained by investigation. In cases of psychoneurosis, dementia praecox, and exhaustive toxic psychoses a high percentage of relatively normal acidity has been found. In psychoses of the depressed, anxious, and retarded types, however, a high percentage of hypochlorhydria or achlorhydria with retarded emptying time bear out in part the hypothesis of the inhibitory effect of profoundly depressing emotions.[3] This has been well illustrated in the sixty-two cases studied in this paper. Too low values are also obtained at the first examination due to the patient's dread of the introduction of the Jutte tube, in all probability, inhibiting the gastric secretion.

AGES	NUMBER OF CASES	PERCENTAGES
20-30	4	6.5
31-40	10	16.0
41-50	27	43.7
51-60	19	30.6
61-70	2	3.2

Fig. III.—The greatest number of cases fall in the fifth and sixth decades; thus the majority of cases occur in mid life. The youngest case was 20 years—the oldest was 67 years.

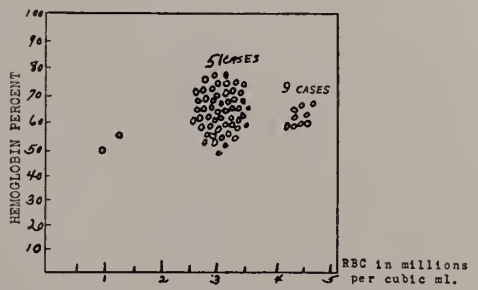

Fig. IV.—In the 62 cases of hypoacidity, every case demonstrated a hemoglobin of 75% or less with color index below I. 2 cases of P. P. A. with color index above I. 51 cases with greatly decreased RBC. 9 with normal RBC.

Today, the injection of neutral red dye during or before a fractional test meal is claimed to help differentiate the true from spurious achylias, neutral red being incapable of excretion by an atrophic gastric mucosa; this method has been abandoned in the study of cases reported.

The supreme decision rests, however, with the histamine test, which was used in all the cases studied. Histamine phosphate, 0.5 milligram, is injected subcutaneously after the fasting specimen is aspirated; then specimens are taken at fifteen minute intervals until three samples are obtained. In all cases, except those of true achlorhydria, a gastric secretory response will be noted. There are very few exceptions to this rule. Further difficulties, such as those encountered in discerning the difference between the achlorhydria of early gastric carcinoma and Addisonian anemia, can be overcome by careful x-rays, gastroscopic examinations, and the fact that in carcinoma of the stomach the absence of free acid is frequently, but not always observed; while the total acid shows a higher curve, mounting to twenty, thirty, or forty degrees, which does not occur in primary anemia. The Oppler Boas bacilli are often present, along with blood, and excess of mucus in cancer of the stomach.

The test meal has been abandoned entirely in the series studied for the reason that if one gives bread and water and one hour later aspirates the stomach contents, the pylorus may have remained closed with the bread remaining in the stomach; the gastric juice is thus diluted by the meal; therefore, the acidity will be relatively low. If, in the same subject the stomach has emptied itself during the hour of the test, then there will be less bread and more gastric juice and the acid reading will be higher even if the actual secretion of the stomach has remained constant. Attempts to introduce into practice various tests for gastric secretion from which the element of the meal has been eliminated have met with vigorous objections from many clinicians.[4] It has been argued, especially, that the stomach must be given normal work to do, namely: a meal, in order to test its function. This objection is obviously unsound, as it might be argued

with equal justice that the strength of a muscle could be tested only by cropping tobacco and not by a dynamometer. Furthermore, who can say what is the normal test meal for any particular person? It might be a pound of roast beef or, perhaps, a cake of cornbread with molasses and whiskey. The important point would rather seem to be that a standard stimulus be used which can be repeated in identical form on successive occasions, with the same or different subject, and which is sufficiently powerful to bring out sharply differences in secretory capability. Histamine is a substance which, on subcutaneous injection, fulfills these specifications; by using it, test meals can be avoided and pure gastric juice is obtained for analysis. Normal standards of gastric secretion following histamine stimulation have now been worked out; and with them the aberrations in disease may profitably be compared.

Vanzant, in the examination of 3,746 persons, found a steady increase in the incidence of achlorhydria from youth to old age; twenty-three to twenty-eight per cent of the individuals at the age of sixty failed to show free acid on repeated fractional analysis.[5]

The symptoms of hypoacidity in early stages are usually few because gastric digestion in these cases is vicariously performed by the intestines.[6] However, there is sometimes loss of appetite and a sense of fullness after eating when the condition has existed for a few years. Nausea and vomiting are rare. In some cases, there is severe pain, heart burn, and eructations just as in hyperacidity; sometimes, too, periods of diarrhea and constipation alternate. Headache, drowsiness, constipation, and fleeting joint and neuritic pains are often encountered. The tongue is pale, flabby, broad, and indented by the teeth in the majority of instances.[7] The condition is very often associated with a motor defect and may end in acute dilatation of the stomach with retained gastric secretion that may cause intense pain, relieved only by a hypodermic of morphine sulfate. One such case was encountered in the sixty-two cases studied; this happened to be a syphilitic patient. Stokes finds that hypoacidity is demonstrable in a great majority of patients with syphilis at all ages.[8]

The treatment of hypoacidity is of course directed at the underlying cause or pathlogy. In cases of neurasthenia with mental depression, psychotherapy is of great value; an attempt should be made to lift the patient out of his depression by introducing new interests, such as sports, social or civic work, and religious duties.

The diet should be directed at eliminating coarse fruits and vegetables which contain large amounts of cellulose or connective tissue. Such fruits as are fed should be stewed and all vegetables thoroughly boiled. Because of the high vitamin content, all citrous juices, well strained, should be allowed. Boiled milk, cocoa, tea, coffee are permissible. Practically all fish are allowed. Well prepared broiled and baked meats, with all fibrous and fatty portions removed, are excellent. The supposed effects of broths and bouillons in stimulating the gastric secretion recommends them to the patient with hypoacidity.[9]

Knud Faber, in 1913, reported that microcytic anemia was frequently present in hypoacidity. A hypochromic anemia occurred in every one of the sixty-two cases studied. Ferrous sulfate and liver extracts were used in the treatment of all cases.

The medicinal treatment naturally takes the form of acid therapy and presents many difficulties because of the great diversity of opinion among authorities as to its administration in amounts and time. In the cases here presented a preparation of glutamic acid hydrochloride, 325 milligrams, with thiamine chloride, 100 international units, and riboflavin, 50 Sherman Bourquin units, was used. One to three capsules containing the above were given at the beginning of each meal and often an additional capsule two hours after the meal. The amount of hydrochloric acid liberated from glutamic acid is more than that which could be administered orally in the form of free acid.[10] There have been some reports that glutamic acid definitely inhibits peptic digestion *in vitro*, but this has not been proven *in vivo*.[11] Betaine hydrochloride, N.N.R., liberates hydrochloric acid gradually when it is dissolved in water and has found some favor amongst gastroenterologists; it was used in three of the cases studied, but no advantage could be found, so its use was discontinued.[12] Some clinicians report good results with phenol in one drop doses or one-half grain of phenol in silver coated pills.[13]

Five cases were treated with short wave diathermy in addition to other therapy. All five were suffering severe epigastric pain; the diathermy treatment gave spectacular relief of the discomfort. There has been

reported in the literature nineteen cases of hypoacidity treated with short wave diathermy with cessation of pain and a general increased well-being. No changes were made in the diet and no additional treatment given. The gastric secretion and acidity were greatly improved. Twelve to fourteen treatments of one-half hour each on a fasting stomach were given with pads in back and over epigastric area.[14]

Constipation usually accompanies gastric hypoacidity and demands attention. A practice has been made to combine a "bitter tonic" with a laxative in the treatment of these cases. I have found the old "Quaker Cocktail" used by Sir William Osler at Blockley in Philadelphia extremely satisfactory.

The formula is as follows:

Tincture of Nux Vomica ..... drams II
Sodium Bicarbonate ..... drams III
Fluid Ext. Cascara Sagrada ..... drams I to III
Tinc. Gentian Compound q.s. ad ounces III
Sig. Teaspoonful in one-third glassful of water twenty minutes before meals with cupful of hot water following breakfast dose.

SUMMARY AND CONCLUSIONS.

1. The term "achlorhydria" or "achylia gastrica" should be reserved for cases that show no free hydrochloric acid after histamine injection.

2. Histamine phosphate injection is the best method of obtaining an accurate picture of the secretory function of the stomach.

3. Neurasthenia with depressive states accounts for the majority of cases with hypoacidity.

4. The most common symptomatology encountered in patients suffering with hypoacidity, in order, are flatulence, constipation, asthenia, anorexia, epigastric pain, and generalized neuritic pain with headaches.

5. The greatest number of sufferers fall in the fifth and sixth decades.

6. Every patient studied presented a secondary anemia, except the two cases of Addisonian anemia.

7. Glutamic acid with thiamine chloride and riboflavin, along with attention to the underlying pathology seems to be the most satisfactory treatment.

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THE TREATMENT OF LUNG ABSCESS

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Abscess of the lung is a serious disease with a reported mortality rate, under purely medical treatment, as high as 58 per cent.[1,2,3] When the generally accepted method of combined medical and surgical treatment is used, there is little change in the mortality rate, but the percentages of cures are higher.[4,5,6] Some of the cases which have apparently been "cured" by medical treatment are left with pulmonary damage—bronchiectasis, fibrosis, and emphysema, often resulting in respiratory disability.

Undoubtedly many patients suffering from abscess

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of the lung recover completely and spontaneously, but the percentage of deaths and of cases left with extensive damage to the lung is unwarrantedly high.

In recent months Neuhof and Touroff,[7] Overholt and Rumel,[8] and others have reported mortality rates below 8 per cent, following the early external drainage of lung abscess cavities. This striking contrast with the figures given above is sufficient to make one realize that medical treatment, as practiced generally, has been inadequate. There are probably several reasons for this failure; among the most important are; 1. Failure to make an early diagnosis. 2. A poor understanding of the pathology of lung abscess. 3. A certain degree of complacency regarding the presence of pus within the lung. Abscess of the lung has been generally considered as a chronic disease; and if the patient is not too toxic when first seen one tends to procrastinate.

The low mortality rate and more rapid and complete recovery resulting from early drainage are based upon diagnosis and operation within the first six weeks. Though experience proves that such early diagnosis is often very difficult and not too common, its importance places the greatest responsibility upon the physician.

A knowledge of the etiology and pathogenesis, bacteriology, and especially the pathology of lung abscess is necessary for any logical and successful method of treatment.

Etiology and Pathogenesis

It has been shown both clinically and experimentally that abscess of the lung is most often produced by passage of infected material through either the blood stream or the air passages. King and Lord[2] report that 56 per cent of the cases in their series followed operations on the upper respiratory tract, and others report comparable figures. Abscess of the lung occurring in these cases may follow aspiration of infected material or the lodging of infected emboli in the pulmonary parenchyma. The incidence of pulmonary emboli is probably higher than is generally thought.

Approximately 10 per cent of the cases in which a predisposing factor can be found follow pneumonias, especially bronchopneumonias which fail to resolve promptly. In these cases bronchial obstruction by plugs of secretion may play a part.

Stern,[9] found that 86 per cent of cases at Mount Sinai Hospital, New York, had advanced dental disease with infected gums and large amounts of dental tartar. Anaerobic organisms are numerous in dental tartar, and Stern believes that the tartar, when aspirated, acts as a foreign body, and aids in the development of lung abscess. It is common to find dental disease in most cases of lung abscess and this may be the initiating factor in the so-called "idiopathic" cases.

Other etiological factors which contribute to pulmonary suppuration, but which are not included in the scope of this paper are tuberculosis, primary bronchiectasis, foreign bodies, tumors arising from the bronchial mucosa, cystic disease of the lung connected with the bronchial tree, and multiple abscesses occurring in the course of septicemia.

Bacteriology

There is no single bacteriologic agent responsible for lung abscess. It is doubtful if the organism responsible for the original infection can be determined, and for all practical purposes only the secondary invaders are of clinical significance. The question of whether lung abscess is always initiated by pathogenic anaerobes is debatable, but it seems certain that they are responsible for maintaining and extending the original infection. The presence of anaerobic streptococci, fusiform bacilli, and spirochetes indicates that necrosis and gangrene are present, and, consequently, are of grave prognostic significance.

The part that synergism plays in enhancing the pathogenicity of these organisms is not clearly understood, but evidence available seems to indicate that it is considerable.

Pathology

The diseases variously described as "pulmonary suppuration", "putrid and non-putrid abscess" of the lung, and "gangrene" of the lung are in effect the same fundamental pathological process, and will be described as such.

According to Boyd[10] an area of infiltration is first noted. Liquefaction then occurs in the center, giving rise to a potential cavity containing pus. The wall of the early abscess is ragged, necrotic, and poorly defined. With the advent of anaerobic organisms necrosis becomes extensive, and secretions become foul. The blood vessels in the periphery of the lesion become thrombosed early, and thus produce an area of more or less avascularity around the cavity. This fact probably accounts for the relatively infrequent occurrence of severe hemoptyses. It prevents, however, adequate oxygenation by way of the blood

stream, and if adequate drainage is not established "gangrene" develops.

The most important result of this process of suppuration from the standpoint of treatment is that the semi-solid tissue which sloughs away from the abscess wall forms a mass in the dependent portion of the cavity while undergoing liquefaction. This acts as a plug and prevents proper oxygenation and drainage of the cavity by way of the bronchus.

When the process ruptures into a bronchus one of three things may occur: 1. If oxygenation and drainage are continuously good, complete recovery usually occurs. 2. If oxygenation and drainage are only partially effective, or intermittent, the resistance of the patient may be able to hold the process in check. The abscess then passes into the chronic stage and is walled off by a thick, fibrous, and avascular capsule. This leads to dilatation and distortion of the nearby bronchial tree. 3. If oxygenation and drainage are not adequate, necrosis of tissue and thrombosis of vessels progress, and the patient usually dies from the absorption of bacterial toxins. At any time the process may rupture through the pleura with the formation of a putrid empyema.

DIAGNOSIS

Abscess of the lung is most successfully treated as an acute disease, and early diagnosis is vital. A proper consciousness of the disease and its consequences will be of great assistance.

The clinical picture is usually evident, and though there are no characteristic physical findings in early lung abscess, the onset of cough, followed by profuse expectoration, fever, and other symptoms of sepsis, combined with a history of pleural pain, pneumonia, or recent operation on the upper respiratory tract, makes the diagnosis most probable.

The sputum may not be foul at the onset, but when it becomes so it means that necrosis and gangrene are taking place. Blood-streaked sputum and frank hemoptyses are inconstant findings.

The usual x-ray picture is that of an isolated cavity, surrounded by a zone of density varying greatly in width. It is common to find a fluid level present if drainage is inadequate. One should remember, however, that if the abcess does not connect with a bronchus, or if the bronchus is obstructed, no cavity is seen, and the involved area appears as a localized area of consolidation varying considerably in density.

TREATMENT

In view of the reported evidence lung abscess must be considered primarily as a surgical disease. However, every case of early lung abscess deserves a trial at medical treatment, aimed toward instituting and maintaining adequate oxygenation and drainage. There is no set time limit in which medical treatment may prove itself. Surgery should be resorted to the instant progressive improvement ceases. The case should be followed from the beginning by both physician and surgeon.

Postural Drainage.—This is the fundamental procedure in non-surgical treatment of lung abscess, and all other aids are purely supplementary. It must be fitted to the individual case, and used constantly.

The picture of a patient hanging from the bed with his head almost on the floor is a familiar one. This method of postural drainage frequently has no beneficial effect, and by forcing necrotic tissue within the cavity into the bronchial opening, may actually prevent drainage. Furthermore, it can be used for only limited periods of time, and is exhausting to most acutely ill patients.

Cavity must be localized exactly by the use of x-ray films taken in the posterior-anterior, lateral, and oblique positions, or stereoscopically. This knowledge, combined with a general idea of the course of the larger bronchi, will enable one to select the position in which drainage will be most effective. Changing the position of the bed is far more satisfactory than moving the patient; elevation of either the foot or head of the bed from eighteen to twenty-four inches, does not cause discomfort to the patient and can be maintained indefinitely.

As an example: if an abscess cavity is located posteriorly in the right lower lobe, maximum drainage would be achieved by elevating the foot of the bed, and turning the patient partially on the left side and partially on the abdomen. A pillow will provide comfortable support for this seemingly awkward position. After two to three hours in this position, the head of the bed should be elevated, and the patient turned on the right side and back. This reversal of position maintained for one to two hours, will allow necrotic tissue in the cavity to fall away from the bronchial opening, thus permitting the most effective oxygenation of the cavity, and allowing any secretions which may have gone into other branch bronchi to drain out. This procedure should be carried out all during the day. At night, the

patient should sleep on the affected side to allow maximum oxygenation, to prevent drainage into uninvolved lung, and to reduce the tendency to cough and expectoration which interfere with rest.

The importance of postural drainage must be explained to the patient to insure maximum co-operation, and it should be carefully supervised. If postural treatment is effective, oxygenation and drainage are adequate at all times, and improvement is progressive, with no evidence of relapse. There are several indications by which the clinical course can be accurately judged:

1. Temperature.—A decrease by lysis is a good sign. A normal, or decreasing temperature followed by a sharp rise to a high level means that there is an intermittent obstruction to proper drainage, or that the disease is progressing. A temperature which remains elevated means that treatment is ineffective, and surgical drainage should be instituted at once.

2. Sputum.—The amount expectorated in twenty-four hours should be collected in a transparent jar to best observe the total amount, layering, and consistency. When drainage is good, the daily total of sputum decreases steadily. A sudden decrease, however, may mean obstruction to drainage. A sudden increase in amount with a rising temperature may mean an increase in size of the cavity or the formation of new ones.

The odor of the sputum is important also, because, when oxygenation and drainage are adequate and healing is taking place, the odor becomes progressively less foul. A persistently foul sputum means inadequate drainage. Sputum raised in the morning is best to use for this daily comparison.

3. X-ray Films.— Weekly films or fluoroscopic examinations (done by the same observer at approximately the same time each morning) should be made without fail. A lesion which is healing will show a progressive decrease in cavity size and in the surrounding zone of pneumonitis. Failure to change is evidence of improper drainage, as is the presence of a fluid level (most often present in the morning).

Bronchoscopy.—This procedure, which is fast becoming available to more and more physicians, has several valuable functions. It is an aid to diagnosis and localization by allowing visualization of the bronchial tree. It is possible by this means to remove material obstructing the bronchus and with the addition of suction, aspirate large quantities of purulent secretions. It would seem, however, that any case requiring repeated bronchial aspiration should be drained surgically.

Arsenicals.—Evidence now available is strongly opposed to intravenous arsenic therapy as a specific for the cure of lung abscess. The tenacity with which physicians have held on to this concept may well be one reason for the failure of many cases to recover. Smith,[11] Lord,[2] Cutler and Gross,[6] and Matson,[12] are all of the opinion that intravenous arsenic plays only a small part in the recovery of a patient with lung abscess.

Keeping in mind the fact that, when necrosis occurs, there is early thrombosis or blood vessels in the wall of the abscess, one can see that a great part of any intravenous medication may never reach the organisms at work in the cavity.

Arsenicals, used in conjunction with postural drainage, are of value in treatment. In the early case, when necrosis is not widespread and before an avascular wall is formed, such treatment may be important. Even in well established cases the use of Mapharsen in 0.04 gm. doses, or Neoarsphenamine in 0.4 gm. doses, given intravenously at five-day intervals, is often beneficial. A patient who is coughing hard and raising large amounts of foul-tasting and foul-smelling sputum is unable to eat properly, and vomits frequently. This is detrimental to general resistance and morale. If this odor and taste can be overcome in part by the use of arsenicals, it is certainly worthwhile.

Supportive Treatment.—This includes the intake of an adequate diet and sufficient fluids; efforts to overcome any anemia by using transfusions, iron, and liver; adequate mouth hygiene, including care of infected teeth and the use of sodium perborate as a mouth wash; and efforts to keep both the patient and his environment as free as possible from the unpleasant odor so often present.

Surgical Treatment.—The procedure of choice in the early case of lung abscess which has not improved steadily under non-surgical treatment, is drainage of the cavity through the chest wall. The procedure is simple and depends primarily upon accurate localization. This method of treatment has resulted in a shorter period of hospitalization, and less residual damage to the lung.[7, 8]

X-ray films taken in the posterior-anterior, lateral, and oblique positions, along with fluoroscopic examination made in the same position as the patient will occupy on the operating table, are of paramount im-

portance. The history is of value, as pleural involvement, due to the peripheral location of almost all abscess cavities, occurs early, and the patient has often had fairly well localized pleural pain. Sometimes palpation of the intercostal spaces reveals a "tender" spot. Neuhol locates the cavity by fluoroscopy and injects a small amount of lipiodol mixed with methylene blue into the overlying intercostal space. Stereoscopic x-ray films then will enable one to see the exact relationship between the lipiodol and the cavity. The methylene blue becomes a valuable guide at the time of operation.

Whether or not the operation is done as a one or two stage procedure depends upon whether pleural symphysis has taken place, and the accurateness with which the adhesions are localized. If the work-up is exact, one stage usually suffices.

The operation is performed under local anesthesia. A two-inch segment of one rib is removed through an incision three to four inches long. The periosteum is removed along with the segment of rib, and the intercostal nerve is crushed to make post-operative care less painful. If pleural symphysis has taken place, the cavity is then opened by an electric cautery, or a pair of scissors. An opening one inch in diameter is sufficient, and will admit a small light for examination of the interior, and the thorough removal of all gangrenous slough. Some operators use oxidizing agents such as zinc oxide paste, applied locally, after the cavity has been thoroughly cleansed. A gauze pack and a tight dressing completes the procedure, and the cavity is allowed to close by means of granulation tissue arising from the base of the cavity.

Summary and Conclusion

Abscess of the lung is a serious disease, which under generally accepted medical treatment has resulted in extensive pulmonary damage and a high mortality rate. The incidence of spontaneous and complete recovery is not known. Early surgical drainage has brought about a striking reduction in this mortality rate.

Most cases of lung abscess follow operations upon the upper respiratory tract, or occur subsequent to pneumonias which do not resolve promptly. In so-called "idiopathic" cases, the incidence of oral infection is extremely high. Careful treatment of these varied entities is important in the prophylaxis of lung abscess.

The bacteriology of lung abscess is complex. Isolation of the original infecting organism is virtually impossible. Anaerobic organisms, as secondary invaders, are responsible for maintaining and extending the disease. Synergism is probably an important factor.

A knowledge of the pathology of lung abscess is essential to an understanding of previous failures in treatment, and in carrying out a logical and successful method of treatment.

Every case of lung abscess deserves a trial at medical treatment, providing adequate oxygenation and drainage can be established at once and maintained continuously. Failure to accomplish this is the indication for immediate surgical drainage.

The external drainage of lung abscess cavities is a simple, logical, and successful surgical procedure.

Note: The author wishes to express his gratitude for the advice and assistance of Dr. J. Maxwell Chamberlain, Principal Thoracic Surgeon, New York State Tuberculosis Hospital, Oneonta, N. Y., in the preparation of this paper.

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LIGNIN TEST FOR SULFONAMIDES

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Since the introduction of the sulfonamides in the treatment of infectious diseases, several deplorable accidents have taken place. The elixir sulfanilamide caused about seventy deaths before it was taken out of circulation; the number of deaths caused by the sulfathiazole tablets which have been contaminated with phenobarbital has not been disclosed thus far. It appears accordingly purposeful to have a simple test on and for the exclusion of sulfanilamide and its derivatives. As my own experiences seemed to suggest, the old test developed by Runge and others for lignin could be worked out for this purpose.

Runge[1] has shown that salts of aniline produce an intense yellow color on fir wood when hydrochloric acid is added to the solution. Subsequently A. W. Hoffmann[2] found the same property in the salts of toluidine, chinoline, leucoline and others. That this property was not restricted to firwood was later shown by S. Scharpringer[3]; any kind of wood exhibited the same color reaction when brought in contact with the reagents. Scharpringer believed this phenomenon to be connected with the presence of "Holzzeug" (lignin) in any kind of wood giving the color reaction. He recommended the evaluation of this property for the purpose of testing lignin in wood, and especially of paper for the content of wood fiber (lignin) in it. H. Singer[4] claimed the color reaction to be connected with the aldehydes and especially with vanillin contained in the wood fiber. Czapek[5] was busy isolating the reacting matter out of the wood; he named it hadromal and found it to be an aldehyde but he could not convince himself that it was vanillin which gave the color reaction. As a matter of fact vanillin is still used with phloroglucin for hydrochloric acid determination.

The sulfonamides are aniline derivatives and accordingly they have proved to react in the same way with wood fiber like the other aniline derivatives. The acid used by the writer to test the sulfonamides was concentrated hydrochloric acid. A tablet containing sulfanilamide, sulfapyridine or sulfathiazole was dissolved in water which, due to the poor solubility of these sulfonamides, resulted in a suspension. Concentrated hydrochloric acid was added and increased the solubility. The resulting suspension was colorless. A wooden applicator was immersed in the solution and, after a time, the immersed part of the applicator showed a beautiful orange-yellow color, the solution remaining colorless. The applicator was immersed again in the colorless solution and used as a pen to write on a newspaper. Almost immediately the colorless fluid appeared on the paper in bright orange-yellow letters which proves that most of the daily newspapers are printed on paper made out of wood fiber. No color could be produced on rag paper. A solution of 1:10,000 produced a faint but still visible orange-yellow color.

To test a solution for the presence of sulfonamides, this solution should be acidified by hydrochloric acid and hydrochloric acid added in excess. If a wooden applicator or a strip of lignin paper turns orange-yellow in color, the presence of sulfonamides is probable. A negative reaction would absolutely exclude for practical purposes the presence of sulfonamides in tested tablets. In a test solution the presence of sulfonamides in a concentration of more than 1:10,000 could be excluded in this way.

This experiment has shown:

1. That like other aniline derivatives the sulfonamides can be used for the detection of lignin in the presence of acids.

2. That this lignin test can be used as a nonspecific but indicative test in testing of sulfonamides.

3. That a negative lignin test practically excludes the presence of sulfonamides in a concentration of more than 1:10,000 in a test solution.

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SELECTED CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was a 23 year old colored multipara with one previous pregnancy who was seen at home by a physician at the eighth month of pregnancy, in labor and with the membranes ruptured. She had been in labor for fifteen hours and had been bleeding in excess passing some fairly large clots. She gave the history of having had some painless vaginal bleeding periodically for one week before the onset of labor. After observing the patient for one hour of labor without progress and with continued bleeding, the physician referred her to a hospital.

At the time of admission to the hospital the temperature was 98.6, pulse 140, respirations 20 and blood pressure 100/70. Vaginal examination revealed a transverse presentation with a prolapsed hand. The cervix was 8 cm. dilated and rigid and she was thought to have a marginal placenta previa. No fetal heart sounds were heard. The bleeding continued and it was decided that she should be delivered. Under ether anesthesia, two incisions were made in the cervix, the cervix then manually dilated and a version and extraction done. The infant weighing five pounds was still-born. The cervix was repaired immediately.

It had been estimated that the blood loss amounted to approximately one pint before admission to the hospital and about a quart during delivery. The bleeding postpartum was not excessive, but her condition remained very poor. It was stated that she was not given a venoclysis or transfusion because of the circulatory collapse although a suitable donor was obtained. She was given a hypodermoclysis and stimulants. It is stated that ten hours postpartum she was cold and clammy and in great distress. It was decided to give her a transfusion then, but she died before it could be started (eleven hours postpartum).

This has been classified as a preventable obstetrical death, because of the absence of prenatal care, the failure to seek medical attention at the onset of the bleeding, and the failure to seek medical attention at the onset of labor. These failures were due to neglect or ignorance on the part of the patient and her family. In addition the failure on the part of the hospital physicians to utilize an approved method of treatment for placenta previa of itself justifies the classification of the present case as preventable.

In the case report of last month the approved methods of treatment of placenta previa at the present time were briefly outlined. The presence of an abnormal presentation is a common finding in placenta previa, and as was the case in the present instance, seriously complicates the treatment. One member of the committee makes the statement that the present case was an ideal one for Braxton Hicks version with slow delivery, a statement with which the entire committee is in accord.

The most serious failure on the part of the physician was the failure to replace blood loss by blood plasma, or fluids. It was generally agreed that transfusion should have been done first rather than attempted last. A pulse of 140 and blood pressure 100/70 at the time of admission indicated immediate efforts at replacement of blood volume, before attempts at delivery were made. The administration of blood or plasma should have been continued during the delivery and afterwards until the patient had recovered from the hemorrhage. In view of these obvious failures on the part of the patient, her family, and the attendants, it is felt that this should be considered as a preventable death.

Public Health Statistics

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for April 1942, compared with the same month in 1941, and for the period of January through April 1942, compared with the same period in 1941 follows:

	APR. 1942	APR. 1941	JAN.-APR. 1942	JAN.-APR. 1941
Typhoid and Paratyphoid Fever	3	9	45	42
Diarrhea and Dysentery	64	86	361	226
Measles	968	9,214	3,340	23,193
Scarlet Fever	103	139	595	732
Diphtheria	24	27	179	150
Poliomyelitis	2	3	3	9
Meningitis	17	21	69	45
Undulant Fever	2	0	8	3
Rocky Mountain Spotted Fever	0	3	1	4
Tularaemia	1	0	19	15

CHEMICAL WARFARE INSTRUCTION

The Emergency Medical Service for Civilian Defense in the State has arranged periods of intensified instruction for the physicians in Virginia on the action of war gases and measures to be adopted for protection.

Instructors already have been selected and trained for this purpose. The course on chemical warfare was given at the University of Cincinnati and at the Kittering Laboratory. Demonstration and instruction were held for a period of three days. From this school a group was selected to lecture to the medical societies in the more congested defense areas of Virginia.

The preparation of these chemical agents is described. Composition and physical properties are stressed so that toxicity and irritability in relation to volatility, dispersion and absorption by the body are clearly understood.

Some of these gases are quite similar in their effect upon the human organism. Those gases that are lung irritants and cause death due to pulmonary œdema and circulatory collapse are recognized not only by the physical findings of the patient, but by the length of time in which they take to act and the characteristic odor they impart to the contaminated.

The visicants or blister gases in turn possess other properties that render them identifiable. They are volatile oils rapidly absorbed by the skin. Irritation as time progresses becomes extreme and the final results appear to be a second or third degree burn often accompanied by a toxemia so severe that death results.

Tear gases, irritant smokes alone or in combination with others, affect the entire environment of man exposed to them. His water supply, his food and his domestic pets may become poisonous and dangerous to him on contact.

In the hands of the physician rests the responsibility of maintaining the safety of civilians in a chemically contaminated area. His recognition of the poisonous agent and the institution of the proper means of decontamination and treatment will result in either a successful raid for those who would bring these poisons to our shores, or success for us with the continuation of our health and war effort.

The men who have devoted their spare time to give these illustrated lectures are Dr. William Grossmann, Assistant Chief of Emergency Medical Services for the State of Virginia and Director of the Bureau of Communicable Diseases, State Health Department; Dr. H. B. Mulholland, Professor of the Practice of Medicine, University of Virginia Department of Medicine; Dr. J. C. Forbes, Associate Professor of Bio-Chemistry, Medical College of Virginia; Dr. E. C. Harper, Director of Tuberculosis Out-Patient Service and Crippled Children's Bureau, State Health Department; Dr. Harry Walker, Associate Professor of Medicine, Medical College of Virginia.

These lectures are considered to be not only timely but necessary. The interest that has been aroused in the potential danger which confronts us has caused an unprecedented attendance by the physicians of the various societies before which the lectures were delivered. The academies of Norfolk, Newport News, Portsmouth and Richmond have been visited. In the near future, this group will appear before many of the societies throughout the State.

Mental Hygiene Activities

Social Work and Mental Hygiene Conference.

Social workers, mental hygienists, public health workers, medical care enthusiasts, and even religionists, had their say in the conference at Richmond, which closed at noon on Saturday, April 25. It was a most interesting and instructive meeting geared to the wartime effort, and should prove inspirational and helpful to all workers who are earnestly and sincerely trying to do something to alleviate the distress, suffering, and only too often the utter helplessness of a large segment of our Virginia citizenry. Mrs. Marion Yingling Frost and her capable fellow conference officers deserve the highest praise for the preparation and execution of the very excellent program.

The Mental Hygiene Society of Virginia was, as usual, charged with the responsibility of arranging the mental hygiene part of the conference. Dr. Howard R. Masters and Dr. David C. Wilson are to be congratulated on the high type program for the public meeting on Wednesday evening, April 22, and for the mental hygiene section on Friday. The speakers were of the best and without question gave a clear and understandable picture of the effects of the war on present social economies as they are related to the civilian population and armed forces. The speakers and their topics were as follows:

WEDNESDAY EVENING, APRIL 22,

Dr. Frank Redwood, presiding

Address: "Bacteria — Rumors — Propaganda — War."

By Dr. C. Charles Burlingame, Psychiatrist-in-Chief of the Neuropsychiatric Institute of the Hartford Retreat, Hartford, Connecticut, and Chairman of the Committee on Public Education of the American Psychiatric Association.

Address: "Propaganda and its Antidote"

By Mr. L. R. Pennington, Inspector, Federal Bureau of Investigation, Washington, D. C.

Discussion Period: Led by Mr. Hugh R. Pomeroy, Director of the Virginia State Planning Board, representing the Virginia Defense Council.

FRIDAY MORNING, APRIL 24

Dr. David C. Wilson, presiding

Theme: "Mental Health In War Times."

Address: "The Effect of War on the Armed Forces."

By Dr. Douglas A. Thom, professor of Psychiatry at Tufts Medical School, Boston, Massachusetts.

Address: "The Effect of War on the Mental Health of the Civilian Population."

By Dr. James B. Pettis, Former Clinical Director of the Western State Hospital, Staunton, Virginia, and now Lieutenant-Commander in the United States Navy, Norfolk, Virginia.

Discussants: Dr. R. Finley Gayle, Jr., and Dr. Joseph E. Barrett.

FRIDAY AFTERNOON, APRIL 24

Dr. David C. Wilson, presiding

Theme: "Effect of War on Delinquency and Crime."

Address: "The Effect of War on the Behavior of Children."

By Dr. Harvie DeJarnette Coghill, Director of the Children's Memorial Clinic, Richmond, Virginia.

Address: "Crime in Wartimes."

By Dr. James A. Nolan, Professor of Sociology at George Washington University, and Director of the Washington, D. C. Criminal Justice Association.

Discussants: Dr. Emily Gardner, Judge J. Hoge Ricks, and Mr. William J. Barron, Assistant Dean of the Law School of the University of Virginia.

SATURDAY MORNING, APRIL 25

Due to the inability of Miss Sue R. Slaughter of Norfolk, and Dr. Victor H. Vogel of Washington, D. C., to fill their speaking engagements, the meeting scheduled for this period was held jointly with the Public Health and Medical Care Section, Dr. William Bickers, presiding

Mr. John Lewin, Counsel for the United States Government, and Mr. Seth Richardson, counsel for the American Medical Association, presented their opposing views as they had been developed in the famous trial involving the Group Health Association Incorporated, of Washington, D. C.

Submitted by F. W. GWALTNEY, Executive Secretary, The Mental Hygiene Society of Virginia.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. E. LATANE FLANAGAN, Richmond.
President-Elect—MRS. H. W. ROGERS, Norfolk.
Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.
Corresponding Secretary—MRS. A. S. LILLY, Richmond.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

Auxiliary to Accomac and Northampton Medical Societies.

The regular meeting of this Auxiliary was held at Kendall Grove on April 14th. The first portion of the afternoon was given over to an oyster roast in Cleveland's special domain were the cheery red table cover vied with the wall decoration of cards from past Christmases for interest, and a menu of oysters both raw and roasted, sandwiches, potato salad and all the other trimmings was given due consideration by all present.

Following this, the members adjourned to the parlor in Mrs. Costin's home for a short business session after which the meeting was turned over to the Program Committee. Mrs. Ames read a short article on "The Modern Florence Nightingale", after which Mrs. Cosby introduced our guest of honor, Mrs. E. Latane Flanagan of Richmond, president of the Woman's Auxiliary to the State Society. Mrs. Flanagan gave a very comprehensive idea of this year's work of the State Auxiliary with special attention to the way the Auxiliary works for better medical legislation, and some of the problems it meets. Her closing remarks were to us as individuals: "Buy defense bonds and stamps. Pray for peace but work for war."

Those present were Mrs. E. H. Trower, President, Mesdames Green, Jackson, Holland, Lynch, Henderson, Ames, Denoon, Cosby, S. S. Kellam, Hamilton, Gladstone and Garrett.

The Auxiliary to the Williamsburg-James City Medical Society

Held its May meeting on May 5th, at 6:30 p. m. at Bruton Parish House. In addition to the regular members, the wives of a number of army doctors stationed in the district were present. Dinner was served by the ladies of Bruton Parrish church, and Mrs. E. Latane Flanagan, President of the State Auxiliary, was the guest of honor.

After dinner the usual order of business was set aside to allow the members and guests to hear a talk by Mrs. Flanagan. She stressed the responsibility of the doctor's wife in wartime and the important part she has to play in helping to guard the health of the community. She also told of the work done in the last legislature to strengthen the medical practice laws, and stressed the fact that though the Auxiliary did a good deal of work, there was no active lobbying, and no legislator was directly approached by the women.

After the meeting the members stayed for awhile to enjoy a dance that was being given that night at the Parish House to soldiers from Fort Eustis.

Book Announcements

Night of Flame. By DYSON CARTER. Reynal & Hitchcock, Incorporated. New York. 1942. 337 pages. Cloth. Price $2.50.

Directory of Medical Specialists. Certified by American Boards. 1942. Published for the Advisory Board for Medical Specialists. Columbia University Press, New York. 1942. 2495 pages. Cloth. Price $7.00.

This second edition contains the names of 4,000 more specialists than did the first edition issued in 1939. This brings the total number of names from 14,000 up to 18,000. Part of this increase is due to the inclusion of a new specialty on neurological surgery. The general plan and arrangement remains the same, but much new material has been added, bringing the number of pages from 1573 up to 2,500. This new edition will thus be much more useful to many more people than was the old edition.

E. C. L. MILLER, M. D.

Essentials of General Surgery. By WALLACE P. RITCHIE, M.D., Clinical Assistant Professor, Department of Surgery, University of Minnesota Medical School. St. Louis. The C. V. Mosby Company. 813 pages. With 237 illustrations. Cloth. Price $8.50.

This book is intended to be an introduction to surgery for the benefit of undergraduate training and study. It is a good deal more than that. It tells in clear, concise, outline-form, all of the essentials of surgery, as the title implies. It is not meant to be used as a textbook, or as a substitution for a textbook. It is to be used as a guide for the thorough study of surgical material.

There is very little left out that could have been included. The outlines, summaries, anatomical considerations, symptoms, and other subtitles are each one worthy of comment because they are so terse and pertinent and easily read and remembered.

The book has a further use in the preparation for an examination for those in graduate training or beyond. It is a quick method of refreshing the mind with some of the details that might have been forgotten.

The sections on orthopedics, urology, and neurology are as well handled as the rest of the volume. The outline of fractures is as good as will be found in any textbook. In fact all parts of this book are well done, and I believe it will have a wide sale.

It seems incredible that there was a need for such a volume as this one in the field of surgery. But when one reads through this book several times and refers to it in reference again and again, one realizes that in no other could he so satisfactorily find the answer to his query. It is a worthy companion to Horsley & Bigger's *Operative Surgery*. It seems to include all that these volumes left out and vice versa. The shorter volume, though, will have less widespread attraction. H. C. L.

Cancer of the Face and Mouth. Diagnosos, Treatment, Surgical Repair. By VILRAY P. BLAIR, M.D., SHERWOOD MOORE, M.D., and LOUIS T. BYARS, M.D., St. Louis. The C. V. Mosby Company. St. Louis. 1941. 599 pages. Illustrated. Cloth. Price $10.00.

The present-day knowledge of cancer of the face is completely presented in this excellent treatise out of St. Louis and Washington University. Seldom do we find a book that so completely covers a given field. The chief delight in this volume is the numerous and varied illustrations. The pictures are of actual cases and well presented to show all gradations of the disease process. The pictures are not pretty, but it seems amazing that one volume could collect such a group of illustrations.

The book is well broken up into chapters and easily read, even by one not well acquainted with the subject. It is the ideal reference book and is among those volumes to which one can refer for a complete summary of modern therapy in a given malignant condition of the face.

The chapter on five-year results is very interesting and will act as a comparison table for future series, even though this series is still small. The chapter on anesthesia ably presents the problems dealing with the mechanics and technics of administration.

The numerous plates showing the operative technic are well done in the clarity of their presentation. They are poorly spaced in the book, however, and take up too much unnecessary space.

The book can be heartily recommended to all interested. It will be a manual to all specialists in this field, but beyond that, it should be accessible to all surgeons, roentgenologists, and tumor clinics.

H. C. L.

Infant Nutrition. A Textbook of Infant Feeding for Students and Practitioners of Medicine. By WILLIAM McKIM MARRIOTT, B.S., M.D., Late Professor of Pediatrics, Washington University School of Medicine; Physician in Chief, St. Louis Children's Hospital, St. Louis. Revised by P. C. JEANS, A.B., M.D., Professor of Pediatrics, College of Medicine, State University of Iowa, Iowa City. Third Edition. St. Louis. The C. V. Mosby Company. 1941. 475 pages. Cloth. Price $5.50.

It is gratifying that Dr. Marriott's excellent book has been revised by one so capable as Dr. Jeans. Dr. Jeans, who is now Professor of Pediatrics at the State University of Iowa, has not changed much of the familiar text of the two earlier editions. Essentially he has brought up to date the information on vitamins, added several new growth charts and some data regarding the use of chemotherapy in dysentery and pyelitis. Five new pages are devoted to allergy and its place in relation to the other problems of infant feeding.

The physiological basis for the choice of various foodstuffs, their important chemical characteristics, and details regarding their use are given. While most practitioners will probably recognize the proprietary preparations by their description, the practical application of the principles discussed would be aided by a chart listing their names along with their principal ingredients. This would avoid reference to another source suggested by the authors.

The unaware student should be warned that the doses recommended for several of the drugs at 6 months and 1 year of age are very much larger than those in present use except in unusual circumstances.

The criticisims are minor. Between the covers of no other book can one find such a review of the best current opinions on infant feeding.

B. M. KAGAN, M. D.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

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VOL. 69. JUNE, 1942. No. 6

Editorials

The Place of the Small Book in Medicine

WE have become accustomed to large and weighty medical books, and to the impressive systems of medicine, which, until a few years ago, practitioners and even medical students, led by the weight of tutorial opinion, mortgaged their futures for. The little volumes which from time to time have come off the medical press in a world of big books have had a hard struggle. Publishers have not liked them. They have found that to market a large book it is not much more expensive than to market a small one, and the larger returns from the former are more inviting. What chance has a $2.50 book of making a go of it for its backers, as against a $15.00 book, when advertising and other selling costs are about the same for both? Ambitious medical authors, their shelves lined with the monumental tomes of their dead predecessors and their living confreres, have envisioned, not smaller, but larger products of their own pens, and with the lush prolixity of undisciplined writing, have thrown out bait for a gullible reader in still more wordy volumes. Professors, expected to know more and more about less and less, have also written big books and recommended big books. They are positively afraid of condensation in their field. Something might be omitted. Something might not be complete. You'd better tell more than the truth than less the truth.

And so it has gone on. But now we must call a halt. Now we must be reasonable and stop despising the small book. If we were more familiar with Sixteenth and Seventeenth Century medicine we should have more respect for small books. Those beautifully bound little volumes of Galen, Glisson, Celsus, Rhazes, Tulp and others, which doctors of a former day took around in their pockets, are wonderful. A great deal of meat can be packed into a small book. Precious parcels often come put up in small packages. Compendiums, synopses, manuals, and epitomes have a real place in

the student's life. Undergraduates and practitioners have often blessed the authors of such little books, for they sometimes can present all the salient facts in clear and concise form without sacrifice of literary merit and at a reasonable price. We cannot of course get along without the systems of medicine, the encyclopedic volumes, but no more can we get along without the abstracts, the summaries, the brief statements of basic facts.

Worthy of mention in this connection, as examples of the value of small books, are two which have just been published by the C. V. Mosby Company. The first is a Synopsis of Materia Medica, Toxicology and Pharmacy by F. R. Davidson, in its second edition. It is a handy and up-to-date presentation with an appropriate inclusion of the latest sulfonamides, vitamins and endocrine preparations. The other, also in its second printing, is a synopsis of Ano-rectal Diseases by Louis J. Hirschman. In addition to the brevity of its presentation, it has to recommend it particularly good illustrations. Both books will find a place for themselves.

The Role of the Allergist in National Defense

COLONEL Hugh J. Morgan, Jr., professor of medicine at Vanderbilt University School of Medicine, now chief of the Medical Subdivision of the Professional Service Division of the Army, spoke to the Society for the Study of Asthma and Allied Conditions at their annual Atlantic City meeting on May 2nd. He told the large group of assembled allergists, obviously anxious to pursue their calling and to serve their country at the same time, that the Army did not need their specialty badly enough to promise to keep its volunteers in their own field once they put on the uniform. He did not say it as bluntly as this, because he had twenty minutes in which to point out the reasonableness of the position taken by the Surgeon General's Office.

In the last war about 7,000 asthmatics were admitted to the various hospitals of the army, and a great deal of allergy was to be found among the fighting forces. In this war it is proposed to keep all "significant allergy" out of the service. This is the job of the Selective Service local boards and of the regional induction boards. Already some 8,000 cases of asthma have been turned up by these boards in the examination of some 200,000 registrants. Some "significant allergy" has, of course, gotten by them, and such cases are slated for the Veteran's Hospitals (Facilities). If there is to be no "significant allery" in the army there is obviously no reason to have allergists.

Colonel Morgan promised that an allergist who found himself on the staff of a general hospital would probably be given work suitable to his training, but he was obliged to add that this would depend somewhat on the attitude towards the specialty of the chief of the individual medical service. One gathered from his remarks that most allergists in the army would find themselves functioning as internists, and if he indicated that for some of them the experience would not prove an unhappy one, he meant no reflection upon the specialty, but was only reminding his hearers that all specialists function most soundly when their sense of proportion is keen and their sense of values is profound.

More Statistics

AT last we have enough statistical data based on analysis of reports of physical examinations of draftees to tell us something about the health of America's man power between the ages of 18 and 36. National headquarters of the selective service

system in its Medical Statistics Bulletin No. 1 informs us that "about 50 per cent of the approximately two million registrants who have been examined have been found to be unqualified for general military service by Selective Service local boards and Army induction stations because of physical, mental and educational reasons. Of the approximately one million registrants who were not qualified for general military service, 900,000 were so classified because of physical and mental defects and 100,000 because of the lack of educational qualifications. Of the 900,000 rejected for physical and mental reasons, 470,000, or 23 per cent of those examined, were qualified for limited military service, and 430,000 or 22 per cent of those examined, were disqualified for military service."

Roughly, then, out of two million men examined, one million or 50 per cent proved to be qualified for military service; 500,000, or 25 per cent were available in a limited capacity; while another 500,000, or 25 per cent, were not qualified for any type of service at all.

The principal causes of rejection, in the order of their importance were: dental defects, 20.9 per cent; eye defects, 13.7 per cent; diseases of cardio-vascular system, 10.6; of the musculo-skeletal system, 6.8; venereal diseases, 6.3; mental and nervous diseases, 6.3; hernias, 6.2; ear defects, 4.6; defective feet, 4; pulmonary diseases including tuberculosis, 2.9; and miscellaneous defects, 17.7.

The army induction boards seem to justify their existence by rejecting 15 per cent of the selectees previously passed as acceptable by the local boards.

It is heartening to learn that of the 900,000 originally disqualified for military service, at least 200,000 can be completely rehabilitated. This is the more understandable when we are told that half of this number have correctable dental defects.

The value of such statistics lies in the use made of them. What are we going to do about the 100,000 young men whose educational qualifications do not permit them to carry a musket? What are we going to do about the 700,000 who cannot be rehabilitated? If, as a result of the war, we can reduce the high incidence of illiteracy and physical unfitness that selective service statistics have brought to light, one consolation for blood, sweat and tears will have been discovered.

A Medical Board on Tour

IT is becoming increasingly apparent that the Army is in critical need of more nurses and doctors. It has been stated on good authority that Virginia must supply at least eight hundred more physicians to the Armed Services within the next nine months. In this connection it will be of interest to doctors in this State to know that a Board of Army officers is now touring Virginia with the purpose of interviewing every doctor not already in the military services.

The duties of this Board will be made easier if physicians generally will inquire when the Board's schedule will permit it to visit their locality, and seek out the Board for the information and guidance it is prepared to give. The Virginia Procurement and Assignment Service deserves our support. It is no easy task that has been laid upon these servants of the Medical Society of Virginia who are now giving largely of their time and energy for the common cause.

Department of Clinical and Medical Education
of the
Medical Society of Virginia

Postgraduate Programs.

During the past month assistance was given the Clinch Valley Medical Society in its program held at Norton, Virginia, on May 2. Following a noon luncheon the following program was presented:

1. "Circulatory Failure Associated with Trauma-Shock."
   Dr. Everette I. Evans, Resident in Surgery, Medical College of Virginia.
2. "Supervision and Treatment of Cardiovascular Conditions in Industry."
   Dr. Maxwell Berry, Mayo Clinic, Associate in Medicine at Medical College of Virginia.
3. "The State Health Department's Program in Industrial Hygiene."
   Dr. J. B. Porterfield, Director, Bureau of Industrial Hygiene, State Health Department.
4. "Modern Burn Treatment."
   Surgical Staff—Medical College of Virginia.

Recent Pamphlets.

Public Health Reports, U. S. Public Health Service, Vol. 57, No. 17, April 24, 1942.

This pamphlet deals with the following topics:
Cadmium Poisoning in Industry
Epidemic of Boils Among Tunnel Workers
National Defense in Southeastern States
Illness among Employees of a Public Utility

The article on National Defense in Southeastern States may be of especial interest to Virginia doctors. It includes a discussion of extra-cantonment activities, mosquito control, community facilities law, milk sanitation control, general sanitation, and military maneuvers. The purpose of the article is to acquaint health workers and others with the efforts of the Federal Government to meet defense sanitation emergencies.

The concluding article deals with prevalence of disease and includes a report on each state of the United States for the week ending April 18, 1942. A sharp decline in the incidence of meningitis is noted. There are also reports from larger cities for the week ending April 4, 1942.

Venereal Disease Information, U. S. Public Health Service, Vol. 23, No. 3, March 1942.

This bulletin is prefaced with an article by Dr. Frank H. Lahey, President of American Medical Association, entitled "The Private Physician Today in the Control of the Venereal Diseases". Dr. Lahey concludes that "As private physicians, our responsibilities are of a dual character: (1) We must be prepared to play our part in the medical control of venereal diseases in our offices and in the public treatment centers, and in our professional capacities we should confine ourselves to the medical aspects of the situation. (2) As responsible citizens in a democratic community—and as citizens with certain special experiences—we must play our part in the total community attack on venereal disease and on the conditions which foster its maintenance and spread."

A rather full report on "The Management of Gonorrhea in General Practice", by the Executive Committee of the American Neisserian Medical Society, deals with prophylaxis, diagnosis, and treatment and special reference to the use of the sulfonamide drugs. There are also numerous annotated references on the various medical and social phases of the subject.

The above pamphlets may be obtained for five cents from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C., or from the Executive Secretary, Department of Clinical and Medical Education, Box 1487, Charlottesville, Virginia.

G. B. ZEHMER,
Executive Secretary.

Societies

The Patrick-Henry Medical Society

Held its quarterly meeting on April 17th, in Martinsville, with the President, Dr. Gustave B. Dudley, presiding. Sixteen members were present.

Mr. E. A. Sale, City Co-ordinator in the Defense Program, explained the defense program briefly and asked the Society to appoint a member as chief of the emergency medical service and to select a place as headquarters where the chief medical officer is to report and where all physicians are to call in during an alert. Dr. F. B. Teague was appointed chief medical officer and the Shackelford Hospital was established as headquarters.

A motion was made and passed suspending the dues of all members called to military service but allowing them to retain their privileges while away.

The problem of rationing tires and autos to physicians in Patrick and Henry counties was discussed.

The guest speakers, Dr. J. P. Rousseau, radiologist, and Dr. Fred Garvey, genito-urinary specialist, of the Bowman Gray School of Medicine in Winston-Salem, N. C., discussed very ably the subject of "Anomalies of the Genito-urinary Tract". Case studies were illustrated by means of x-ray films and lantern slides.

The next meeting of the Society will be on July 10th.

H. M. PRICE,
Secretary-Treasurer.

The Tazewell County Medical Society

Held its regular bi-monthly meeting on May 14, in Tazewell, at which time Dr. Henry Davis of Bluefield, presented a paper on "Some of the Less Discussed Uses of the Sulfonamides" and Dr. W. R. Strader of Richlands read a paper on "The Toxic Effects of the Sulfonamides".

At the business meeting the members of the society voted to co-operate with the Farm Security Administration in setting up a plan by which the clients of the above mentioned agency could obtain medical care. An executive Committee to help work out this plan was appointed as follows: Drs. A. D. Parson, Richlands, A. Wilson Brown, Pocahontas, Henry Davis, Bluefield, and M. E. Johnston, Tazewell.

Dr. A. Wilson Brown of Pocahontas and Dr. E. L. Hirsley, of Jewell Ridge, were elected members of the local society.

It was decided that the next meeting should be held on July 9, at the Tazewell County Country Club at which time the members of the Buchanan-Dickenson, Russell and Mercer County Medical Societies would be invited to attend.

Dr. Rufus Brittain, of Jewell Ridge and Dr. M. E. Johnston of Tazewell were elected delegate and alternate, respectively, to the State meeting, October 5-7.

Fairfax County Medical Society.

This Society met on May the 14th at the home of its secretary, Dr. Alice Kiessling in West Falls Church, at which time the U. S. Public Health Service film, Syphilis, in sound and color, was shown. Dr. L. F. Hobbs of Alexandria was elected to associate membership. Dr. W. D. Chase of McLean and Dr. Sigmund Newman of Vienna were elected delegate and alternate, respectively to the Society meeting in Roanoke.

The defense set-up of Fairfax County and other business matters were discussed. Following this, the meeting adjourned for refreshments.

The Roanoke Academy of Medicine,

At its meeting on May the 4th, elected the following officers for the year beginning with the October meeting: President, Dr. Paul Davis; vice-presidents, Dr. A. M. Groseclose and Dr. Charles Irvin; and secretary-treasurer, Dr. Ruth Barnhart, all of Roanoke. Drs. J. M. Green of Ferrum and M. H. McClintic and John O. Hurt of Roanoke were elected to membership.

After the business meeting, Dr. Alexander McCausland, Physician at the Hercules Powder Company, Radford, presented an interesting paper on Toxicology of Tri-Nitro-Toluene. A social period with light refreshments followed.

Dr. Mortimer H. Williams and Dr. H. B. Stone, Jr., are the retiring president and secretary.

Hanover County Medical Society.

Officers elected at the annual meeting of this society are: President, Dr. J. A. Wright, Doswell; vice-president, Dr. A. E. Murray, Beaverdam; and

secretary-treasurer, Dr. J. D. Hamner, Jr., Ashland.

Southwestern Virginia Medical Society.

This Society held its annual spring meeting in Wytheville on April 23rd under the presidency of Dr. W. C. Caudill, Pearisburg. The following program was presented: Infections of the Hand by Dr. R. H. Grubbs, Christiansburg; Acute Hematogenous Osteomyelitis by Dr. Thomas H. Kuhnert, Bristol; General Treatment of Burns by Dr. J. Gordon Rennie, Pulaski; Treatment of Asthma by Dr. R. A. Morison, Abingdon; 30,000 Army Examinations on Southwest Virginia Boys by Captain Joseph M. Dixon, M. C. There was then a short business session, followed by dinner, after which the program was resumed and the president presented the invited guests, Dr. I. C. Riggin, State Health Commissioner, who spoke on The Medical Aspects of Civilian Defense, and Dr. Frank S. Johns of Richmond, who gave an illustrated paper on Carcinoma of the Colon with Special Reference to the One Stage Operation.

Drs. James H. Gressette, Roanoke; Glenn W. Phipps, Independence; J. M. Graybeal, Marion; and Walter S. Schiff, Marion, were elected to membership.

Dr. David B. Stuart, Roanoke, is secretary of this organization.

The South Piedmont Medical Society

Held its semi-annual meeting in Lynchburg on April 15th, with the President, Dr. E. E. Barksdale, Danville, presiding. The following program was presented: General Discussion of the Pathology of the Ureter by Dr. R. W. Upchurch, Danville; Indications for and Results from Nephropexy by Dr. W. W. Koontz, Lynchburg; Female Urethral Stones by Dr. E. L. Eastlack, South Boston; Arrehenoblastoma of the Ovary by Dr. J. W. Houck, Lynchburg; Some Remarks on War Surgery by Dr. Carrington Williams, Richmond; and Some Aspects of Cancer of the Stomach by Dr. J. Shelton Horsley, Richmond.

Officers for the ensuing year were elected as follows: President, Dr. Bernard H. Kyle, Lynchburg; vice-presidents, Drs. James R. Gorman, Lynchburg; W. C. Brann, South Boston; and R. W. Upchurch, Danville; and secretary-treasurer, Dr. F. O. Plunkett, (re-elected) Lynchburg. The next meeting will be held in Danville the third Wednesday in November.

News

The Roanoke Meeting.

Roanoke doctors are planning for a fine meeting in that city, October 5-7, and hope for a good attendance in spite of the large number of members in the armed forces of the country. Dr. M. A. Johnson, Jr., chairman of publicity, has been called into Service and Dr. G. M. Maxwell has succeeded him as chairman of this feature. All statistical information having been given, Dr. Maxwell, for that committee, extends the following invitation in verse, with the hope that all who can may attend.

To the Members of the Medical Society of Virginia

In the Valley of Virginia
Where the Roanoke River rolls
There's a warm and hearty welcome for you all,
For we'll all be glad to give you
All that Roanoke City holds,
If you'll only come to see us in the Fall.
When the autumn leaves are turning
Into silver, red and gold,
And the tang of autumn tingles in the brain
We'll remember your last visit
To us, in our Mountain Hold,
And be longing just to see your face again.

Here the silver moon keeps shining
In the heavens up above,
In the star-bespangled dome so clear and bright,
And the Roanoke friends are pining,
Their bright eyes agleam with love,
With no fear of Axis bombing every night.

So just lay aside your worries,
Put dull care away and smile,
Pack your suit-case, buy a ticket, or some gas,
And forget about your hurries,
Rest your office force awhile,
And enjoy the happy hours as they pass.
Here the mocking bird is calling
From the hill-top and the glen
And the bass are waiting for you in the stream,
And the autumn leaves are falling
As cool breezes blow again
And you only have to close your eyes and dream.

Here the silver moon keeps shining
In the heavens up above,
In the star-bespangled dome so clear and bright,
And the Roanoke friends are pining,
Their bright eyes agleam with love,
With no fear of Axis bombing every night.

COMMITTEE ON ARRANGEMENTS.

Appointments in Medical Society of Virginia.

Due to the fact that Dr. A. D. Hart, councilor for the Eighth District, has entered the Service, Dr. R. W. Miller, president, has appointed Dr. H. B. Mulholland, also of the University, as councilor from that District until the meeting of the Society in the Fall.

Dr. J. W. Preston of Roanoke has been appointed as chairman of the Department of Clinical and Medical Education, succeeding Dr. Walter B. Martin, now in the Service, and Dr. Guy R. Fisher will act as chairman of the Medical Economics Committee in place of Dr. John Hundley, Jr., also in the Army.

Re-Appointed on State Board of Medical Examiners.

In accordance with recommendations from the House of Delegates, at its meeting last Fall, Governor Darden has recently re-appointed the following members of the State Board of Medical Examiners for a term of four years, ending March 31, 1946:

Dr. R. D. Bates, Newtown.
Dr. P. St. L. Moncure, Norfolk.
Dr. H. U. Stephenson, Richmond.
Dr. Wm. B. McIlwaine, Petersburg.
Dr. I. C. Harrison, Danville.
Dr. J. W. Preston, Roanoke.
Dr. P. W. Boyd, Winchester.
Dr. Lewis Holladay, Orange.
Dr. F. H. Smith, Abingdon.

Medical College of Virginia News

Commencement exercises closing the one hundred fourth session of the Medical College of Virginia, Richmond, will be held June 1. Dr. Harvey E. Jordan, dean of the department of medicine, University of Virginia, Charlottesville, will be the speaker. Graduates number 64 in medicine, 31 in dentistry, 22 in pharmacy, and 34 in nursing.

The honorary degree of Doctor of Science will be conferred upon Dr. Ramon Suarez, professor of tropical medicine, University of Puerto Rico, an alumnus of the school of medicine of the college.

Gifts for the current session total $136,520.88.

Dr. Jacques P. Gray, one of the unit directors of the Michigan Community Health project of the W. K. Kellogg Foundation, has been appointed professor of preventive and public health medicine, and dean of the school of medicine, effective July 1, 1942. Dr. Lee E. Sutton, Jr., who has been dean for the past ten years, will continue with the institution as professor of pediatrics. The major part of Doctor Gray's time will be given to the dean's office and associated duties. Dr. Fred J. Wampler will in the future give increasing time to industrial medicine with the title of professor of preventive and industrial medicine.

The college will begin its accelerated program for the coming session on July 6, the academic year being divided into three quarters of eleven weeks each with two weeks' vacation periods between quarters. This will permit students in the schools of medicine, dentistry, and pharmacy to graduate in three calendar years instead of four.

The hospital unit of the college, known as General Hospital 45, has been ordered to active duty. Lieutenant Colonel Powell Williams, associate professor of medicine at the college, recently succeeded Lieutenant Colonel Carrington Williams, professor of clinical surgery, as unit director. Miss Anne F. Parsons, assistant professor of nursing, will head the nursing personnel of the unit. The unit is comprised of 21 members of the medical staff, 20 of the surgical staff, 2 of the laboratory, 2 of the roentgenological, 8 of the dental, one, detachment, one, headquarters, two, medical supply, and two registrars. The nursing staff now numbers seventy-five but will be built up to one hundred twenty. Lieutenant Colonel A. Stephens Graham, associate professor of surgery, will head the surgical staff, and Major Alton D. Brashear, associate professor of anatomy, will head the dental staff. The commander of the unit, Lieutenant Colonel Powell Williams, heads the medical staff.

Dr. Porter P. Vinson, professor of bronchoscopy, esophagoscopy, and gastroscopy, gave a paper on intra-bronchial tumors at the meeting of the American Association for the Study of Neoplastic Diseases, held at Bowman-Gray Medical School, Winston Salem, North Carolina, on April 23. Dr. W. E. Pembleton, a member of his staff, accompanied him.

News From University of Virginia, Department of Medicine.

Dr. Eugene M. Landis was elected President of the American Society of Clinical Investigation at the recent meeting in Atlantic City.

Dr. H. E. Jordan and Dr. C. C. Speidel attended the meeting of the American Association of Anatomists at the Cornell University Medical College in New York City on April 1st to 3rd. Dr. Speidel presented a motion picture demonstration on "Myelin Sheath Adjustments" and a paper (with Dr. H. E. Jordan) on "The Constancy in Number of Sarcomeres Within Individual Striated Muscle Fibres". Dr. Jordan presented a demonstration (with Dr. J. M. Robeson of Syracuse University) on "The Production of Lymphoid Nodules in the Bone Marrow of the Domestic Pigeon, Following Splenectomy".

Dr. E. P. Lehman was elected a member of the Board of Directors of the American Society for the Control of Cancer, to fill out Dr. Parran's unexpired term ending 1944. Dr. J. Shelton Horsley, Richmond, is the only other Virginian on this Board.

At the annual meeting of the Virginia Academy of Science in Roanoke, May 7th to 9th, the following members of the staff of the Medical School of the University of Virginia presented papers before the group on Preventive Medicine and Bacteriology: Dr. George McL. Lawson, on the subject "Streptococci Resistant to Sulfonamide Therapy"; Dr. William E. Bray and Mrs. Jeanette S. Carter, on the subject "A Simplified Method for Anaerobic Plate Cultures"; Drs. Ralph B. Houlihan and George McL. Lawson, on the subject "Quantitative Determinations of Myxoma Virus in Nasal Washings, Blood, Feces and Urine and Their Relations to Transmissibility"; Dr. Kenneth B. Grim, on the subject "Kodachrome Photomicrography"; Dr. William E. Bray, on the subject "Human Infection Caused by Dalmonella sandiego".

Dr. Hunter H. McGuire

Of Winchester was in May re-elected president of the Winchester Memorial Hospital, a position which he has held for a number of years.

Dr. Guy W. Horsley,

Richmond, was the principal speaker before the Sphinx Club of Acca Temple of this city on April the 30th, his subject being "Choose to Live".

Virginia Tuberculosis Association.

At the annual meeting of this Association held in Roanoke in April, Dr. Frank S. Johns, Richmond, was re-elected president, and Dr. Roy K. Flannagan, also of Richmond, was named secretary.

The John Horsley Memorial Prize

Has this year been awarded to Dr. James W. Watts, neurologist at George Washington University. This award was established at the University of Virginia by Dr. J. Shelton Horsley, Richmond, as a memorial to his father and is bestowed upon a medical graduate for the best thesis on a surgical subject. It is made every two years. Dr. Watts is a member of the class of '28, University of Virginia, Department of Medicine.

The American Congress of Physical Therapy

Will hold its 21st annual scientific and clinical session September 9-12, at the Hotel William Penn, Pittsburgh, Pa. All sessions will be open to members of the regular medical profession and their qualified aids. Information concerning the seminar and program of the convention proper may be obtained from the American Congress of Physical Therapy, 30 N. Michigan Avenue, Chicago.

"Parergon".

The second edition of this handsome book, published by Mead Johnson & Company of Evansville, Ind., has made its appearance. The name is from the Greek word meaning "work by the side of work", and demonstrates that doctors not only have hobbies but many of them talents which may be brought to the fore. The present edition carries illustrations of many lovely paintings, photographs, sculpture, drawings, and carvings.

A Get-Together for the S. M. A.

The Southern Medical Association entertained the members of the Richmond Academy of Medicine, officers of the Medical Society of Virginia, members of the faculties of Virginia's two medical schools, and others at a dinner at the John Marshall Hotel in Richmond, on May the 15th, this being the inauguration of activities in preparation for its meeting in Richmond, next Fall. The executive committee of the Council of the S. M. A. had met in Richmond that day and these doctors, other officers and

a number of ex-presidents were at the guest table. These were introduced by the secretary-manager, Mr. C. P. Loranz, and the President, Dr. M. Pinson Neal of Columbia, Mo., a graduate of the former University College of Medicine in Richmond, gave a reminiscent talk, speaking especially of his interest in the city and his pleasure at being here again. Following this, Dr. Wyndham B. Blanton, general chairman for the meeting, introduced the members of his various committees, all of whom are interested in working for the success of this meeting.

Dates are November 9-12. Make your plans to come!

The American Association for the Study of Goiter Cancels Meeting.

On account of the present unsettled World conditions, the Council of this Association deemed it wise to cancel their annual meeting which was scheduled for June 1, 2, and 3, in Atlanta, Georgia. They hope to be able in the near future to assemble again and celebrate with a "Victory" meeting.

Dr. Winn Associated with Dr. Ware.

Dr. H. Hudnall Ware, Jr., Richmond, on May 1st announced the association of Dr. W. C. Winn in the practice of obstetrics and gynecology. Their offices are at 816 West Franklin Street, this city. Dr. Winn was for the past two years connected with the Bureau of Maternal and Child Health of the Virginia State Department of Health.

Virginia Obstetrical and Gynecological Society.

Twelve members of the Society attended the Second American Congress on Obstetrics and Gynecology in St. Louis April 6 to 10, this replacing their Travel Club for this year. An informal banquet at the Club Continental, Hotel Jefferson, on the evening of April 8th was enjoyed by all who attended. Those from Virginia were: Drs. C. J. Andrews and M. B. Savage of Norfolk, Dr. H. G. Bland of Newport News, Drs. F. O. Plunkett and S. E. Oglesby of Lynchburg, Dr. J. M. Nokes of Charlottesville, and Drs. A. L. Carson, Jr., L. L. Shamburger, H. H. Ware, Jr., and W. C. Winn of Richmond, and two honorary members, Dr. Bayard Carter of Durham, N. C., and Dr. Jas. R. Miller of Hartford, Conn.

Guests of the various members included Dr. and Mrs. S. A. Cosgrove and Dr. and Mrs. Edw. G. Waters of Jersey City, Dr. Walter B. Mount of Montclair, N. J., Mrs. M. B. Savage of Norfolk, Dr. Adam Thorp of Rocky Mount, N. C., Dr. Jno. M. Fleming of Spartanburg, S. C., Dr. Kenneth Hancock of Charlottesville, Dr. T. M. Vorbrinck of Norfolk, Dr. Robert Woodhull of Minot, N. D., and Dr. Frank R. Lock of Winston-Salem, N. C.

Dr. John O. Hurt,

For the past three years clinical director at the Lynchburg State Colony, has located in Roanoke, where he will be engaged in general practice. His office is 506 Medical Arts Building.

Dr. W. O. Bailey, Jr.,

Son of Dr. and Mrs. W. O. Bailey of Leesburg, has recently been promoted to captain in the Army medical corps. At last report, he was stationed at Trinidad, B. W. I.

National Health Council.

Dr. George S. Stevenson, medical director of the National Committee for Mental Hygiene, was recently elected president of the National Health Council, succeeding Dr. Kendall Emerson, managing director of the National Tuberculosis Association.

The National Health Council is a clearing house for eighteen national voluntary organizations promoting better health. Among the services which it renders is the maintenance of extensive library containing more than 6,000 volumes and 30,000 pamphlets dealing with public health, sanitation, hygiene and related subjects, which are available to research workers from all parts of the United States.

Married.

Captain James Otey Burke, M. C., U. S. A., and Miss Alice DeLancey Davis, Atlanta, Ga., May 2nd. Captain Burke is a graduate of the Medical College of Virginia in 1937 and is now stationed at Atlanta.

Dr. Henry St. George Tucker, Jr., Richmond, and Miss Mary Grasty Bell, Staunton, April 25th. Dr. Tucker graduated in medicine from the University of Virginia in 1937.

66 Years of Service.

Eli Lilly and Company of Indianapolis has just issued a pamphlet telling of its 66 years' existence

in a most interesting way and shows how "great oaks from little acorns grow". This company first began its work on May 16, 1876, in a small, poorly lighted building, eighteen feet wide and fifty feet long. This is in striking contrast to the present thirty-two modern buildings. Inside a small corner of this first laboratory, "fenced" off, were a little old-fashioned upright desk, a calendar, a machine for duplicating handwritten memorandums, and a potbellied stove. There was no telephone for Bell had just applied for a patent "on a machine to be known as a telephone". The business started on the sum of $1,300. Two years after the business started, it was forced into larger quarters and in 1881 it was moved to the present site. The first branch house was established in Kansas City and other branch offices have been established in New York, Chicago, and New Orleans, and a sales office in San Francisco. Ten years after the founding date, the company had fifty employees, among them being a chemist who is still at work in the Lilly Laboratories. Today there are thirty chemists and pharmacists employed in the assay and control of pharmaceutical preparations.

In spite of this vast expansion, the Eli Lilly and Company feels they are "still pioneers in the world of research. Behind the doors of the Lilly Research Laboratories are limitless plains, unexplored valleys, untouched depths in the world of chemistry. This work is yet to be done. The lights will always burn in the laboratory for our task will never be completed. At the end of sixty-six years we are at the beginning of a new era of accomplishment."

The Virginia Pediatric Society

Held it Spring Clinical meeting on May the 16th, at the Academy of Medicine Building in Richmond, with the president, Dr. W. L. Harris of Norfolk presiding. At the morning session, papers were presented by Dr. Basil B. Jones of Richmond on "An Obscure Lung Condition" and by Dr. B. M. Kagan, also of Richmond, on "Dehydration and Water Balance", illustrated with charts and case reports. Following this, luncheon was served in the dining room, after which the members held a clinical forum at the Medical College of Virginia at which several interesting cases were presented for discussion by members of the Department of Pediatrics of the College.

Dr. Leta J. White of Petersburg is vice-president, and Dr. E. A. Harper of Lynchburg secretary-treasurer.

Dr. Angus McBryde,

Associate professor of Pediatrics at Duke University, Durham, N. C., was the guest speaker before the Norfolk County Medical Society at its meeting on April the 27th, his subject being "The Premature Infant".

Members of Virginia USO Sponsoring Group.

The following doctors have been appointed as members of the State Sponsoring Committee of the Virginia USO War Fund Campaign: Dr. Staige Blackford, University; Drs. Wyndham B. Blanton, Chas. M. Caravati, Fred M. Hodges, J. Shelton Horsley, Stuart McGuire, Stuart N. Michaux, Clifton M. Miller, Roshier W. Miller, W. Lowndes Peple, and Charles R. Robins, Sr., all of Richmond.

The USO is seeking $407,000 in Virginia to provide recreational and comfort facilities for all the men in the armed forces, and the drive is to start June 1st.

International College of Surgeons.

The National Assembly of this association will be held July 15-18 at the Shirley-Savoy Hotel in Denver, Colorado, with speakers of international prominence on the program. This meeting is open to all physicians and surgeons in good standing in their state medical society and has been purposely opened to this large group that this organization might play its part in the National Defense Program.

Dr. B. B. Bagby,

Formerly with the State Health Department and more recently chief health officer and epidemiologist of the city of Richmond (pending the appointment of a permanent officer) has been named defense director of Northumberland County, and will have complete charge of civilian defense activities in that county.

For Sale.

Slightly used High Pressure Water Sterilizer Unit, on white stand. Has two 6-gallon tanks—hot water and cold, two filters, one gallon capacity distilled water attachment. Electric heat. Address "Sterlizer," care this journal, 1200 East Clay Street, Richmond. (*Adv.*)

For Sale.

TRUVISION STERESCOPE made by General Electric, mounted on adjustable floor stand, complete with 125 volt rheostat. In use about three years; excellent condition. Price $195.00 F.O.B. Radford, Virginia. James P. King, M. D., Radford, Va. (*Adv.*)

Obituaries

Dr. William Roane Aylett,

Well known physician of Tappahannock, died April 25th after a brief illness. He was seventy-one years of age and graduated in medicine from the University of Virginia in 1895. Dr. Aylett practiced in Newport News for about twenty-five years, following which he located in Tappahannock. He had been a member of the Medical Society of Virginia since 1895. His wife survives him.

Resolutions on Dr. Doughtie.

At a recent meeting of the Norfolk County Medical Society, the following appreciation of Dr. Doughtie was presented:

Charles Wilson Doughtie was born February 20, 1877, in Nansemond County, Virginia. He received his early education in the public schools, attended the Suffolk Military Academy and was graduated from the Medical College of Virginia in 1898.

After obtaining his degree in medicine Dr. Doughtie came to Norfolk where he practised his profession until a few weeks before his death.

Soon after starting practise he became interested in surgery and in order to qualify himself he served one year as interne at the old Norfolk Protestant Hospital. This was followed by service as assistant on the Surgical and Gynecological Staffs at St. Vincents Hospital. He then attended the New York Polyclinic for further preparation.

Returning to Norfolk he resumed his practise and later became Chief of the Gynecological Service of the Norfolk General Hospital. Some years later he retired to the Consulting Staff, a place he held until his death.

The esteem in which Charles Wilson Doughtie was regarded by his associates is indicated by the positions of public service he held.

He was President of the Norfolk County Medical Society 1922-1923, the first president of the Medical Staff of the Norfolk General Hospital which he again held some years later, the first president of the Ex-Internes Organization of the Norfolk General Hospital, and also served on many civic boards.

Dr. Doughtie was a member of the Norfolk County Medical Society, Medical Society of Virginia, Seaboard Medical Association, American Medical Association, a Fellow of the American College of Surgeons, and the Norfolk and Western Surgical Association.

His sincerity, his strong sense of fairness, his unfailing kindness, courtesy and ability endeared him to all who knew him.

He is survived by his wife Alice Smith Doughtie, whom he married in 1910, and three children, Katherine Doughtie, Mrs. Robert Crile and Charles Wilson Doughtie, Jr.

In the death of Charles Wilson Doughtie the Norfolk County Medical Society has lost one of its most loyal and outstanding members.

THEREFORE, BE IT RESOLVED: That a copy of this resolution be sent to the family and a copy spread upon the records of the Norfolk County Medical Society.

C. C. SMITH
W. P. MOORE
H. M. DOLES, *Chairman.*

Resolutions on Dr. King.

The officers and members of the Arlington County Medical Society, at their regular meeting on April 23rd, recorded their deep sorrow and loss in the passing of their esteemed colleague, Dr. William Binford King.

Dr. King was born in Richmond, Virginia, and received his pre-medical education in that city. He received his medical degree from George Washington University in 1925, and was instructor in Anatomy there from 1917 to 1925, and associate professor of Anatomy from 1925 to 1932. He was President of the George Washington Medical Society in 1940 and a Member of the Executive Committee of the General Alumni Association of George Washington University in 1940. Dr. King was a member of the District of Columbia Medical Society, the Arlington County Medical Society, the Medical Society of Virginia, and a Fellow of the American Medical Association. In addition to teaching at George Washington University Dr. King also taught at Georgetown University for several years. He was a successful practitioner for many years in both Washington, D. C., and Arlington, Virginia.

Ever zealous in civic and patriotic duties, he recently devoted much time to the Metropolitan Defense program and served as Assistant Chief Medical and Liason Officer for this area.

It was always a pleasure to meet Dr. King socially and as a consultant. He will be greatly missed by his many friends in the profession.

Signed J. R. B. HUTCHINSON,
Secretary.

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Are the Neuritic Symptoms of Pregnancy *due to a deficiency of vitamin B_1 (thiamine)?*

SUCH common neuritic symptoms of pregnancy as pains in arms and legs, muscle weakness, and (less frequent but more serious) paralysis of the extremities may result from a shortage of antineuritic vitamins, recent investigations appear to show. Although neuronitis of pregnancy has long been considered a toxemia, no toxins have ever been identified.

Clinical observations of Strauss and McDonald lead to the conclusion that the condition is a dietary deficiency disorder similar to beriberi, caused by lack of vitamin B_1. They report recovery in their cases receiving this therapy, including dried brewers' yeast.

Hyperemesis as Cause of Avitaminosis

Wechsler observes that all cases of polyneuritis of pregnancy recorded in the literature were preceded by long periods of severe vomiting. "It would seem," he adds, "that because of actual starvation these patients suffered from avitaminosis and consequent neuritis," a view likewise held by Hirst, Luikart, and Gustafson. Plass and Mengert observe that the practice of giving high carbohydrate feedings for hyperemesis gravidarum is still more likely to cause avitaminosis.

Dried brewers' yeast, as it is far richer than any other food in vitamin B_1 (thiamine), is being used with benefit both in the prevention and treatment of polyneuritic symptoms of pregnancy. Lewy found that additions of yeast to the diet reduced electric irritability of the peripheral nerves and brought clinical improvement. Vorhaus states that he and his associates, after administering large amounts of vitamin B_1 (thiamine) to 250 patients having various types of neuritis, including that of pregnancy, observed in about 90% of cases "varying degrees of improvement, i.e., from partial relief of pain to complete disappearance of all symptoms."

Need for Vitamin B_1 (thiamine) in Lactation

Evans and Burr, Hartwell, Sure and co-workers, and Macy *et al* are among numerous authorities who find that the nursing mother also needs a supplement of vitamin B_1 (thiamine) from 3 to 5 times the normal requirement. It is accepted that during pregnancy and lactation the requirement for vitamin G (riboflavin) is increased.

Consisting of nonviable yeast, Mead's Brewers Yeast Tablets offer not less than 50 International vitamin B_1 (thiamine) units and 50 Sherman vitamin G (riboflavin) units per gram (20 International units of vitamin B_1 and 20 Sherman units of vitamin G per tablet).

Supplied in bottles of 250 and 1,000 tablets, also in 6-oz. bottles of powder.

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VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

VOL. 69. July, 1942 No. 7.

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Annual Meeting—Medical Society of Virginia
Roanoke, October 5, 6 and 7, 1942

Get UP, rookie!

• The strictly regulated program of the Army helps to harden the soft, lackadaisical rookie. But what about the men who remain in civilian life?

When the deleterious effect of a soft civilian life—irregular habits, lack of exercise, faulty diet—leads to constipation, the use of Petrogalar* is frequently indicated.

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Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 69, No. 7.
WHOLE No. 1081.

RICHMOND, VA., JULY, 1942.

$2.00 A YEAR
25 CENTS A COPY

Guest Editorial

Combination in Restraint of Trade

A DOCTOR in Richmond in 1942 would have a hard time to "sell" his practice. Conditions were different in England during the formative period of our law. When the beloved physician of Little Swithington decided to retire, he could and did sell his practice to some up and coming young man from the city, who moved to the village and succeeded to the practice for the reason that there was no other doctor in the neighborhood. To make sure that he got what he bargained for, he insisted that the selling physician promise not to compete with him. Sometimes the older man regretted the bargain and tried to resume his ministrations. The young man could file a suit in the Court of Chancery to enjoin this breach of contract and to keep the retired physician in a state of retirement. The Court would issue the injunction if it regarded the contract as reasonable, and it always referred to such contracts as "contracts in restraint of trade."

In 1890, Senator Sherman won undying fame and the Granger vote by getting his anti-trust law passed. This law forbids every contract or combination in restraint of trade or commerce. It applies to the 48 states and the District of Columbia, but the authority of Congress is greater in the District than it is in the states. It owns the District and can regulate all activities there; but, in the states, it can regulate only interstate commerce. Nothing that does not itself move or cause something to move from one place to another, can be regarded as "commerce," and since a bed-ridden patient is extremely static, the practice of medicine cannot be considered to be commerce.

The courts attribute to Senator Sherman and his friends the intent to exercise the full power of Congress, and therefore the words "trade and commerce" are held to mean something very different in the District from what they mean as applied to the States. In both places they mean as much as they constitutionally can mean. In the District the words are given their old English meaning and there they apply to the medical profession. They cannot be given that meaning in the states, and the medical profession has nothing to fear from Thurman Arnold outside the District of Columbia.

We have in Virginia an anti-trust act that corresponds to the Sherman Act, but we have nobody who corresponds to Thurman Arnold. Moreover, the Virginia statute was construed in 1933 by the highest Virginia court in such a way that it could not apply to the medical profession. (*Werth* v. *Fire Adjustment Bureau,* 160 Va. 845). Therefore the decision of the United States Court of Appeals for the District of Columbia in the case of *United States* v. *American Medical Association* contains no threat to medical ethics in Virginia.

Two years ago the District of Columbia court ruled that the Medical Association would have to stand trial on the indictment; and the Supreme Court refused to review the case. Last year the trial resulted in a verdict of guilty which was affirmed on June 15th of this year by the Court of Appeals. The Supreme Court will again be requested to hear the case and the chances are about one in five that it will do so.

In its latest opinion, the Court of Appeals of the District made some interesting comparisons between the medical and the legal professions, suggesting that both are due for an overhauling. The Court refers to the fact that lawyers were formerly completely independent, whereas "now many of them are salaried employees on the staffs of large corporate industrial and financial organizations." The Court seems to miss the ethical point involved. No professional man objects to working for a salary so long as he renders services to the person who pays him the salary. The objectionable feature of Group Health Association (which the A. M. A. was convicted of boycotting) was not that it paid salaries to professional men, but that it sold the services of professional men to its customers. A lay organization can legally advertise for customers; and once competing corporations start advertising for customers for medical services, the ethical practice of medicine is on the way out.

When a lawyer works for a bank or a railroad on a salary, the corporation is not selling his services to its customers. If the bank gets its lawyer to prepare a customer's will, the bank is violating the law and the lawyer is violating the ethics of his profession. Similarly a lawyer may not accept employment from the American Automobile Association to help its members who have accidents, and may not accept employment from the Richmond Academy of Medicine to collect its members' bills. Apparently the only gap in the Virginia laws is the curious exception in the medical practice act which allows an incorporated hospital to buy the services of a licensed physician and resell them to its patrons. (*Stuart Circle Hospital Corporation* v. *Curry*, 173 Va. 136). Group Health Association could possibly come into Virginia under that exception without violating the law (but that exception refers to any hospital "now established in this State" and the word "now" was used in 1928). If they did build a hospital in Virginia, the Virginia doctors could probably boycott them with impunity.

In the course of its opinion the Court of Appeals said: "The people give the privilege of professional monopoly and the people may take it away." That dictum is more true of the medical profession than it is of the legal profession. The state legislature can authorize laymen to practice medicine, but a statute authorizing laymen to practice law would be held unconstitutional by most of the state courts. The Court's phrase "the privilege of professional monopoly" is an unfortunate one. The reason legislatures restrict the practice of medicine to licensed physicians is not for the purpose of conferring a favor on the doctors but for the purpose of protecting the public against quacks.

It is unlikely that this case will be reversed by the Supreme Court. The American Medical Association has been successful in raising the standards of medical education in this country through appeals to the legislatures. If the profession as a whole is unitedly opposed to the corporate practice of medicine it can probably succeed in persuading Congress and the state legislatures to make illegal such organizations as Group Health Association, Inc.

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ANEMIA IN OFFICE PRACTICE*

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There has been a tradition that county societies appreciate guest speakers who say that good practice in any branch or specialty requires only clinical experience and use of "the five senses". Laboratory procedures have thus been considered "high-brow" and "impractical". But to present the problem of anemia in general practice today, without reference to certain appropriate laboratory devices, would be useless romancing. At the same time I would insist that the real clinician, like the good sea-captain, remains master of his gadgets, is wise in the signs of old sea trails, and, if necessary, may "steer a course" without the aid of gadgets.

As a practitioner of internal medicine, with special interest in clinical hematology, I wish to present a few cases from my office records bearing on the problems of anemia. These problems should be viewed in the same light as those of fever. Both are symptoms and results of underlying disease. To treat either anemia or fever as a disease *per se*, although occasionally necessary, is generally a confession of diagnostic failure.

Case 1. Mrs. Philadelphia Registrite, 70 years of age, a peppery dowager-widow, has been under my care, afflicted with diabetes mellitus and a bad temper, for many years. Not long ago she complained more bitterly than usual of leg discomfort, sore mouth and weakness. My technician, requested to recheck the blood sugar, notes that the blood looks "thin". She thereupon proceeds beyond my order and, in addition to the "satisfactory" blood sugar report, she hands me a blood count which is far from normal—despite the fact that the routine count made last year was good. This one shows 1,500,000 reds, 4,000 whites, 40 per cent hemoglobin and a differential indicating macrocytosis and all the other cardinal features of pernicious anemia.

Here, then, the doctor is jolted with the fact that his regular service to Mrs. R. is faulty, and might have continued so, but for good luck and a good technician. Liver extract therapy follows and the old lady makes a remarkable comeback, to the dismay of relatives who were waiting and watching hopefully. This case illustrates the fact that even the experienced butcher should weigh his cuts. *Pernicious anemia may creep into the accustomed picture of elderly chronics with few or no signals. Accurate periodic blood counting is essential in good office practice.* The same remarks apply, and illustrative cases could be adduced, concerning leukemia and progressive anemia from silent hemorrhage, malignancy or aplasia.

Case II. Miss Ennui, a middle-aged bookkeeper, visits my establishment after trying many others. She says she suffers from "low blood pressure", "acidity" and has always been "anemic". She elaborates. Her "hemoglobin is rarely over 75 and is often only 70". Iron "shots" are said to be necessary to keep her "going". I question, examine and find nothing. Then my technician comes in with the blood report and whispers "she says she is anemic but this count is normal".

It takes an accurate, experienced technician to report confidently a normal hemoglobin in a patient who remarks while her finger is being pricked, "the last count was 60". The woods are full, however, of "low blood count" patients who have nothing wrong with their blood! The easy medical and lay habit of accepting "anemia" (like that of "low blood pressure" or "acidity") as an adequate explanation of the symptoms of the (maladjusted?) chronic complainer is all too common. This case illustrates many facts. In the first place, such a pseudoanemic medical customer is rarely satisfied with "honest" scales. She may insist they are "short weight" and may soon return to a "shot in the arm specialist" who continues to find her hemoglobin fluctuating precariously between 70.5 and 80% (usually with nothing but the "look and guess" Talquist scale as his guide!). She doesn't know, and the therapist doesn't admit, that under the most expert research technique there is a ± 5% variation in hemoglobin readings. In the average determination 10% variation is to be expected. And, sad to relate, a 20% error is not very unusual! Such cases as this, however, require the most careful study. For there are some persons with real, low grade, chronic anemia whose diagnostic and therapeutic problem is of the utmost importance. A meticulous hematological clinical examination must

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*Read before the Norfolk County Medical Society, at Norfolk, March 30, 1942.

be carried out before one may have the temerity to say "your blood and blood forming organs are perfectly normal".

Of course, as a clinician, I recognize the fact that hematology, like surgery, gastroenterology and all the rest, must share the burden and responsibility of the chronic neurotic. As a clinician, therefore, one may condone iron shots and even the Talquist hemoglobinometer, as instruments of psychotherapy. But as a hematologist one knows that several hypodermics daily of the best available parenteral iron medicament hardly equal in hematinic value a few iron pills by mouth. One also knows that the usual Talquist hemoglobin reading is little, if any, better than a good look at the patient in broad daylight.

At this point it might be well to summarize the salient features of a good clinical hematological examination: (1) An intelligent history, based on knowledge of significant data; (2) Examination of skin—color, jaundice, rash, purpura, nodules; (3) Tongue mucosa and gums; (4) Lymphnodes, liver, and spleen; (5) Complete blood count, reticulocytes, platelets, fragility (sometimes); (6) Sometimes sternal marrow; (7) Usually gastric analysis; (8) Node biopsy when indicated; (9) Bilirubin and urobilin study; (10) Hemoglobin in stools and urine; (11) In appropriate cases bleeding and clotting time and prothrombin determination; (12) Sometimes x-ray of mediastinum and bones.

Case III. This is a selected case to indicate that office practice of clinical hematology is sometimes important and not *totally* dependent upon having a good technician.

A lad of 14 was carried into the office in the arms of his father. This boy had been just discharged from a neighboring hospital with a diagnosis of hopeless juvenile hepatic cirrhosis. He had literally been taken home to die. The family doctor, however, wasn't satisfied and referred him to me. The lad had become acutely ill with progressive obstructive jaundice, vomiting, abdominal pain, putty colored stools and fever of 3 weeks' duration. Examination disclosed deep jaundice, somnolence, purpura, enlarged spleen and a liver mass. The blood count was normal except for trifling anemia and slight leukocytosis. My reasoning then was as follows: Perhaps this is terminal juvenile cirrhosis but this is a rare disease and this boy had upper abdominal pain at the onset; hence, perhaps his jaundice and purpura are due to some more usual cause such as gall stone obstruction of the common duct with secondary liver degeneration. But why the splenomegaly? Then the idea came. The most common cause of gall stones in childhood is hemolytic ictero-anemia. Hemolytic anemia would account for splenomegaly and gall stones; and the accident of common duct obstruction would account for the rest. My technician was then recalled to carry out two additional office procedures: a recticulocyte count and a fragility test. At the end of an hour I had the thrilling answer: Reticulocytes 12 per cent; Fragility 0.650-0.450. Diagnosis: Hemolytic ictero-anemia presumably complicated by gall stone obstruction of the common duct. The rest of the story can be told briefly and happily. Hospitalization—transfusion and vitamin K—operation (Dr. I. S. Ravdin) with removal of stones from gall bladder and common duct—tube drainage of duct for a month—reoperation—splenectomy—cure! I had the pleasure of presenting this lad 6 months later to a medical gathering in Atlantic City. He had gained 20 pounds, grown an inch and was hematologically and clinically well.

Case IV. Mr. H., age 45, an automobile mechanic, was referred by his "boss" because of failing vision, weakness and indigestion. He had been unable to work at all for 6 months and had been "ailing" for 2 years. Anemia was first discovered in 1939 when the patient was hospitalized on account of otis media. After this he visited various doctors and was treated with iron "shots", liver, iron and copper pills, vitamins and transfusions. An ophthalmologist thought he had a brain tumor. Another doctor thought he had stomach ulcer.

Physical examination revealed pallor, smooth tongue, absent knee-jerks, and ophthalmologic appearance suggesting optic atrophy. Blood count showed 1.6 million red cells, 38 per cent hemoglobin, 3,500 leukocytes and marked macrocytosis. Gastric analysis showed complete achlorhydria.

It was hard for me to believe that a man could be treated in a large metropolis by a number of doctors without recognition of such obvious intimations of pernicious anemia. Careful questioning, however, indicated no sustained period of liver therapy; and no one had told him he had pernicious anemia. The other possibilities seemed to be aplastic anemia and aleukemic leukemia. Therefore I advised him to enter the hospital (for sternal marrow examination and x-ray studies). He refused. I then told him if he would take treatment for one week I could determine whether or not I could help him. He agreed to this trial period and 1 c.c. of reticulogen was administered every other day. On the fifth day his reticulocytes (previously 0.5 per cent) were 14 per cent and on the sixth day his reticulocytes reached a peak of 25 per cent. From then on this man's recovery was dramatic—as anyone might predict on the conclusive diagnosis of pernicous anemia. He now has 5 million red cells, 95 per cent hemoglobin, has gained 15 pounds and is back at full-time work.

One of the modern therapeutic sins is to treat cases of anemia with haphazard doses of a little iron, a little liver, perhaps copper and some vitamins in "shot gun" proprietaries. Some patients thus treated may be temporarily improved, but, through lack of knowledge and guidance, soon lapse. A poorly treated or partially treated case of

pernicious anemia is often hard to diagnose with certainty.

If one neglects the golden opportunity to observe the reticulocyte crisis which comes in 4 to 8 days after start of parenteral treatment in pernicious anemia in relapse, one has not been clinically adequate. Patients with pernicious anemia can be kept hematologically well with parenteral liver therapy. They need little or no iron, as a rule, and should not run the hazard of inadequate treatment with proprietary oral mixtures. On the other hand, cases of anemia not pernicious in type are rarely benefited by liver, and undoubtedly waste thousands of dollars each year on expensive proprietary combinations.

Thus it will be seen there is no easy "rule" for successful management of anemia. The best results are, as in every branch of medical endeavor, reserved to the best trained, most critically experienced clinicians who are armed with and understand the limitations and significance of accurate laboratory aids—whether self-performed or readily available.

In the minutes remaining I shall attempt to present the highlights of the more common anemias encountered in clinical practice.

I. *Anemias Resulting from Loss of Blood*: These are the so-called secondary anemias, with low color index and a "fighting" bone marrow. The commonest causes in order of frequency are (1) menorrhagia and metrorrhagia (fibroid and functional uterine bleeding and carcinoma); (2) gastrointestinal bleeding (peptic ulcer, ulcerative colitis, bleeding hemorroids, polypus, carcinoma of stomach and cecum, hepatic cirrhosis with bleeding varices and intestinal parasitism; (3) Urinary tract bleeding—nephritis, calculus, polypus, malignancy and pyelocystitis; (4) postoperative, post-partum and post-traumatic hemorrhage, and (5) hemorrhage secondary to hemorrhagic blood dyscrasias, such as purpura, chronic obstructive jaundice, leukemia or hemophilia.

In the anemias resulting solely from hemorrhage we find normal or low color index, plenty of platelets, polymorphonuclear leukocytes normal or increased and evidence of bone marrow regeneration. The numerous modern "hematological indices" are, in my opinion, no better than the simpler data just mentioned and constitute for the most part "works of supererogation".

The treatment of such anemias may be summarized as follows: stop the leak and remove the cause of the leak if possible, supply diet rich in blood building properties, transfuse if necessary, administer iron (especially ferrous salts*) and sometimes, in appropriate cases, certain hormones antuitrin S, thyroid, testosterone).

II. *Anemias Resulting from Disturbed Blood Formation*: In this important group the mechanisms of conditioned deficiency are pre-eminent in pernicious anemia, chlorotic (idiopathic hypochromic) anemia, sprue, pellagra, colitis, gastritis, polyposis, cirrhosis. Other anemias due to disturbed blood formation include aplastic anemia (primary and secondary to x-ray, benzol, etc.), myelophthisic anemia, from bone marrow metastases of malignancy, leukemias and myelosclerotic anemia. The concept of so-called achrestic anemia is, as as far as I am concerned, merely verbiage for macrocytic anemia of undetermined etiology.

Representative blood pictures in these anemias due to disturbed blood formation are: First, the macrocytic hyperchromic type—typified by pernicious anemia; Second, microcytic hypochromic anemia of chlorosis; Third, normocytic, leukopenic, thrombocytopenic anemia of aplastic states; and, Fourth, leukemic and leukemoid pictures of the malignant bone marrow diseases. The proper treatment depends upon diagnosis and varies all the way from liver extract for pernicious anemia, ferrous sulphate for chlorosis, and thyroid therapy for myxedema, to x-ray and radioactive phosphorus for leukemia.†

III. *Anemia Resulting from Excess Hemolysis*: (1) *Hemolytic Anemias Based on Hereditary Malformation of the Red Cell*—(a) Hemolitic icteroanemia; (b) Sickle-cell anemia; (c) Cooley's anemia. (2) *Hemolytic Anemias Due to Bacteria and Protozoa*—(a) Streptococcus septicemia, etc.; (b) Malaria. (3) *Hemolytic Anemias Due to Chemical Hemolysins*—(a) Phenylhydrazine; (b) benzol, etc. (4) *Hemolytic Anemia Due to Allergic and Anaphylactic Factors*—(a) Drug idiosyncrasy (sulfonamides, quinin, arsphenamine, etc.); (b) Incompatible blood transfusion, serum and snakebite; (c) Pregnancy (hematologically incom-

*Copper is not necessary in adult hematological practice.

†Arsenic is useful in chronic myelogenous leukemia but is of no value in the other varieties. Hydrochloric acid is sometimes helpful in pernicious anemia and chlorosis.

patible); (d) Paroxsymal hemoglobinuria (cold-luetic type); (e) Nocturnal paroxysmal hemoglobinuria; (f) Favism; (g) Ledere's anemia (?).

The hematological features common to the hemolytic anemias, in addition to anemia itself (which may be macrocytic, microcytic, normocytic or spherocytic) are: Splenomegaly, icterus, urobilinuria and bilirubinemia (but no bilirubinuria), reticulocytosis, hyperplastic bone marrow and in hemolytic ictero-anemia (of familial type) increased fragility of the red cells. In chronic cases there is a marked tendency to gall stone formation. The treatment of these hemolytic anemias depends upon the cause, and ranges all the way from splenectomy for familial icterus, sulfonamide for septicemia, and quinine for malaria, to removal of the hemolytic "antigen" if such is present. This may mean cessation of the very drugs just named, such as sulfonamide, quinin, and arsphenamine—removal of an environmental factor to which the patient is sensitized, such as benzol—or, in rare instances, termination of a "toxic" pregnancy. In all instances transfusion may be useful and even life-saving, but special care should be exercised in the selection of donors for these patients.

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THE PRACTICAL APPLICATION OF PREVENTIVE MEDICINE TO AN ARMY AT WAR, INCLUDING EMPHASIS ON VENEREAL DISEASE CONTROL

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Human material is the most precious equipment of an army. Its conservation with minimum waste is imperative, from both the strictly military and humane considerations.

A field army, originally composed of the best voluntary and drafted material available and subsequently decimated by disease, physical and mental, is useless except as a demonstration in pathology. History furnishes many examples of such forces. Conversely, a military force, large or small, in a state of high physical and mental efficiency possesses great striking power.

An army, then, is worth just as much as its units total, from the squad of a few men to the division, corps and army.

The *individual* units are human beings—soldiers, and upon their careful selection, training and general care depends the service which they can give in time of stress. The essential procedures in the development and care of a soldier for his job are important, and cannot be neglected if the defense forces are to profit. These activities properly come under the head of definite Preventive Medical measures, Personal Hygiene, Sanitation, and the Medical and Surgical treatment of the sick, wounded and accidentally injured.

Specific Preventive Medical measures include the proper physical examination of inducted men for army service, to exclude the physically and mentally unfit; vaccination against smallpox and typhoid of these enrolled; the administration of atabrine or quinine in malarial districts; prophylaxis against venereal disease following exposure; and other protective inoculations or vaccinations against specific infectious disease as special conditions might require, including yellow fever, cholera, plague, pneumonia, diphtheria and Rocky Mountain spotted fever. Tetanus toxoid administration, and inoculation against yellow fever are also now compulsory in the army.

Personal Hygiene properly includes all practical means to increase personal resistance against physical and mental disease. Instruction in this weapon of defense requires the efforts of medical officers and all officers on troop duty.

Venereal disease talks and demonstration of their effects by use of moving picture films are important. These talks should be tactful, not too lurid, and films minus falsely romantic atmosphere should be used.

Also, practical instruction in hygiene of the soldier includes emphasizing the value of outdoor exercise in work and play, under proper supervision, to avoid useless incapacitating injuries; the necessity for sleep, good food, daily warm-water-soap baths from head to foot as prevention against scabies

and louse infestation and skin infections; necessity for properly-fitting roomy foot-wear, with waterproofing of leather and daily change of medium heavy or heavy socks; the value of clean well ventilated uncrowded barracks and tents; the proper care of eating utensils after eating, by hot soap and water scrubs, rinsing in boiling water and air drying without the use of cloths; care of feet and toe nails, washing of hands before meals and after visiting latrines; the issue and wearing of properly fitted clothing in sufficient quantity and varied to suit the climate and weather conditions. Sufficient blankets should be issued for warm sleeping. Feet should be kept dry and warm with no constriction of legs and feet by too tightly laced leggings and shoes. Care of the feet prevents disabling "trench foot" caused by the action of cold, dampness, and constriction. Blisters are avoided by "limbering" new shoes with oil and hand-kneading them; also by well-fitting socks. Contact with prostitutes must be avoided; regular physical inspections of troops by medical officers are vital checks on the command. In addition, attention must be given to good hair cuts (not shaved heads!), clean scalps, regular dental treatments, properly regulated barber shops, the ration, field and camp equipment for cooking and storage of food, proper cooking, and physical condition of food handlers.

All these foregoing checks and procedures are important in personal hygiene. They can and are being done in the army. The soldier must be taught them if he is to remain on active duty instead of in a bed or on a chair.

A very special effort should be made by all Medical Officers and troop-unit Commanders to show the soldier how he himself can reduce spray droplet respiratory infection by avoiding close contact with people who have colds and coughs, and by covering his own mouth and nose with his handkerchief or other material when coughing or sneezing if he himself is infected.

So far as good *Mental Hygiene* is concerned, the more carefully general physical hygiene is practiced the better will be mental resistance against psychoneuroses and more serious forms of disturbance. Good discipline in a command implies development of subjective control (self-control) and a certain amount of objective control (control by others). The functions of command in the military service make this objective control of individuals and units necessary, in order to avoid confusion and to carry out definite missions.

Good discipline then, in a soldier, means the ability to control himself, a willingness to be controlled by others in the right way, co-ordination of individual effort with others to accomplish an end, co-operation in work and training, and prompt, intelligent obedience to military orders under all conditions.

Such an attitude is good for a soldier. Real army training possesses the elements of good mental hygiene and is not conducive to mental troubles, but the reverse. It teaches logical, sound, purposeful thinking on a basis of fact, instead of aimless mental butterflying or mental inertia.

By applying the simple principles of good discipline, thoroughly taught, the individual soldier will successfully meet the stress and strain of any type of duty in combat or in training.

As a matter of simple fact and demonstration in many U. S. Army combat divisions of the last Great War in France, the proper type of discipline developed was a powerful factor in practical Preventive Medicine, because of the fine spirit of obedience in the really self-controlled and objectively-controlled commands. Thousands of lives were conserved in such units through real courage properly directed in the place of reckless disobedience of orders and useless exposure and slaughter. In the present war the same results are being demonstrated in well trained and properly disciplined field force units.

In such fortunate commands, almost automatic functioning through good discipline becomes the saving factor in a tense situation.

And, in a final suggestion along this line, let it be emphasized that the obedient, self-respecting, manly soldier never for a moment loses his personality in the "Military Mass"—he contributes that personality to an effort intelligently, and coordinates and cooperates to a common end, no matter what the final result to himself. That attitude is the highest type of service in or out of the army.

To further a healthful attitude, let us be careful in this war army, to avoid the inexcusable breeding of mental contagion through suggestion, by using in the presence of trainees such terms as "shellshock", "soldier's heart", etc. You can turn

a raw recruit into a mental or cardiac cripple in ten minutes by overemphasizing in front of him some high-sounding medical terms! All armies in training recognized this fact, in the other Great War—and usually after the mental contagion had already spread.

It has been asserted occasionally by some of those classed as experts, that army service in peace and war leads "to the threshold of insanity". Well, if a soldier develops a psychosis in the army, he would probably have developed it in the stress and strain of civil life, excluding very exceptional circumstances, and the discharges for functional and serious mental disability among young soldiers of short service simply indicates an insufficient period of observation to detect personality trends and defects before induction. And as we all know, the woods of civil life harbor a lot psychopaths.

Proper Sanitation in the soldier's life, means as good and beneficial an environment as the mission of his command will permit. The ideal outside of actual battle conditions is of course high. Appropriations often determine how far along the approach route to perfection we advance. And perfection has never been attained even with an abundance of money to help.

General surroundings, utilities, water supplies, drainage, anti-malarial work of all kinds, rodent extermination, mosquito and other insect control, dairy inspections, good pasteurized milk supply, civil population checks in cooperation with local authorities; alcoholic sales control and prostitution and venereal disease control; proper buildings or tents, heating, hot water supplies, sewage and waste disposal, water examinations and chlorination when necessary, bathing facilities, kitchen technique, refrigeration, fly control, food handlers' inspections, general food and meat storage and handling, vetrinary inspections of dairies, forage, meats and animals; tracing of infectious diseases and their control, and general sanitary surveys—all these are or should be routine in and near camps and barracks for the soldiers protection. They are required by Army Regulations.

Thus, with care in Hygiene and Sanitation and Preventive Medical procedures, a definite check is obtained against such casualty producers as syphilis and gonorrhea, typhoid, paratyphoid, malaria, yellow fever, the deficiency diseases (pellagra, scurvy, beri-beri, alcoholic neuritis, etc.), dengue, tularemia, trichinosis, intestinal parasites, dysentery, diarrhea, cholera, plague, undulant fever, hemorrhagic jaundice, gas bacillus injection, diphtheria, tetanus, Rocky Mountain spotted fever, and serious functional mental disturbances.

What success the Army, Navy, Public Health Service, State and local health agencies have had in fighting these conditions, often against the opposition of ignorance, indifference and prejudice is a stimulating saga of accomplishment.

The final and most intimate procedure in the care of the soldier is the professional surgical and medical salvage of the individual when he is diseased, injured or wounded in battle. This service is the close-up combat that springs from the necessity of conserving the fighting strength of the command and the old urge for humane treatment to prevent invalidism, dependency and death. In the army in peace or war, care and skill in such treatment has a direct bearing on government finances in the expenditure of money for pensions, loss of time and services, etc.

Medicine and Surgery and all its organized activities, can be proud of its record in the last great war when 4,500,000 soldiers were treated in Army Hospitals, 151,000 casualties being evacuated and given surgical and medical treatment in the battle of the Meuse-Argonne, alone. We can also be proud of its present accomplishments, from Bataan and Corregidor to the home territory and all theatres of operations.

In this war program and army expansion there is a very definite fixed and mobile hospitalization and medical emergency aid program under way, this in addition to the already existing army facilities. Medical equipment, mobile and stationary, is on hand and being furnished to cover all units from the battalions to the divisions, corps and armies. Affiliated Hospital Units are being rapidly formed in many leading hospitals in the United States. Training hospital units are being formed. Personnel is being supplied and trained in special centers, schools and hospitals as rapidly as possible. From the Surgeon General's Office to the smallest medical detachment with troops in this country and overseas, the watch-word is speed and care in training of all grades in efficient emergency aid, evacuation, and definitive treatment of the sick and

injured. The medical expansion program from that of a small peace-time to a real army is great but it is being accomplished by the army with the help of the best agencies in our own profession and others.

An attempt has been made to show the direct bearing of Preventive Medicine, Hygiene, Sanitation and the practice of Surgery and Medicine on the selection, education, care and salvage of the soldier —and there are so many new men to be taught the necessary lessons of right living for right service to themselves and their country. Their spirit is splendid and they deserve the best help we can give. And they must learn to help and care for themselves.

To prevent, control or treat successfully respiratory, intestinal, insect-borne, deficiency diseases, general infectious diseases and functional and serious mental conditions is important. To prevent or care for surgical conditions, including accidental injuries and battle casualties is essential in the conservation of the training and fighting strength of a great or small command.

But the leading cause of loss of time from duty in the army is venereal disease—syphilis, gonorrhea, chancroid, and more rarely in the army, lympho-granuloma inguinale. It is this vicious combine of trouble-makers for the individual and the mass that we must all combat by prevention and careful treatment.

The army instituted an open campaign against venereal disease in 1909, and had made, long before, anti-venereal efforts sporadically and in spots.

George Washington, himself, in 1778 as the first Commander-in-Chief, emphasized the venereal scourge among his troops and urged steps to control the inroads of these infections, as they were a leading cause of disability and loss of duty time, then, as they are now 165 years later.

Their destructive prevalence in civil communities is known to you all, and they are being attacked in one of the greatest campaigns ever waged by civilian and Federal agencies against an age old enemy.

The army led in the all-out move against syphilis and gonorrhea in 1909 when instruction in sex hygiene and the nature and effects of venereal disease was begun. Voluntary medical prophylaxis was started. The annual venereal rate admittance then was approximately 175 per thousand.

In 1911 compulsory prophylaxis, monthly physical inspections by medical officers, and loss of pay while under treatment was instituted. The admittance rate then dropped to 165 per thousand per year. At last a start was really being made. And it was about time since venereal disease had taken a heavy toll in the Mexican War, in the Civil and Spanish Wars, and the waste was continuing.

In the Mexican War, 1846-48 period, the admittance rate averaged 162 per thousand per year, in the Civil War from 180 to 210, in the Spanish war 140 to 160.

During the last Great War, venereal rates in the A.E.F. in France for the period September 18, 1918 to June 4, 1919 was 40.46 per thousand per year. This special period included two months of combat only, and the post-Armistice "we want to go home" interval, a fair average for estimation purposes. For the entire period of troops in France from June 1917 on, the admission rate was 34 per thousand per year. The rate in the United States for the entire period of hostilities was approximately 117 per thousand per year.

In France, General Order No. 6, G.H.Q., A.E.F., July 2, 1917 was an anti-venereal order with clear intent, and due to General Pershing's backing of the Chief Surgeon A.E.F., by this order and others and their application, desirable results followed. Education of troops of all grades, medical prophylaxis, disciplinary action and segregation and early treatment followed, and this line of endeavor was continued and amplified. It was General Pershing's great desire to have soldiers of the A.E.F. return home a credit to themselves and their Country, and as free as possible from venereal infection.

With a total army strength of 182,000 in all stations, the Surgeon General's Report for the fiscal year 1939, covering vital statistics for the calendar year 1938, shows for that year 5,594 venereal cases—6% lower than in 1937, with 26% syphilis and 64% gonorrhea. In general, syphilis is to gonorrhea about 1 to 3, chancroid to gonorrhea about 1 to 4. There is an occasional lymphogranuloma inguinale. Many so-called "chancroids" often turn out to be primary syphilis. Total number of syphilis cases under treatment in January, 1938—4,176, and in January 1939—4,337. Cases under treatment including all types, were about three times the number of new cases. At the present time,

the army venereal rate is approximately 40 per thousand per year.

Rates among white troops outside the continental United States vary from 79 per thousand per year in the Phillipines to 14 per thousand in the Territory of Hawaii. It is interesting to note that the rate of Filipino enlisted men is about 3 per thousand. Panama and Porto Rico also present real problems in venereal control with much higher rates than in the States.

According to Major General Charles Reynolds, M.C., Retired Surgeon General, the Army has records of venereal disease since 1819—probably the first and constantly the most reliable statistics of these diseases in existence. He says that because the Army discovered its venereal diseases, recorded them and published its records, it acquired the reputation of having a high incidence. He further states that during most of this time the general public had no more idea of the amount of venereal disease which it harbored than of its total of sin in general.

To-day, the specific, continuously applied means of combating these troop scourges in the army include:

1. Education of Officers and Enlisted men by Medical Officers in the nature and control of these infections, and by lectures formal and informal to large and small groups of troops by officers and non-commissioned officers serving with troops. Recruits are given intensive education soon after enrollment.
2. Disciplinary measures, including court-martial for failure to report an acquired infection.
3. Special venereal prophylactic stations and individual self-administered prophylaxis, and other protection.
4. Loss of pay under certain conditions while under treatment for venereal disease in a hospital.
5. Athletic and recreational activities to fill normal needs in every soldier's life. Libraries, moving pictures, etc.
6. Continued out-patient treatment and check after hospitalization.
7. Careful records of all cases, and a Syphilitic Register which follows the soldier in every change of station.
8. Careful treatment, during the infectious stage, in hospital. Restriction and observation after leaving hospital for as long as necessary.
9. Spinal fluid, blood Wassermann and Kahn, multiple urethral and prostatic secretion smears before considering patient free of active disease capable of being transmitted.
10. Reporting all venereal cases to local Civil Health Board authorities.
11. Cooperation with state and local health and welfare agencies in programs of repression of prostitution.

There is no reasonable basis for considering that army and civilian control and eradication of venereal disease cannot be progressively conducted. Army, U. S. Public Health Service and State Health Department records in recent years prove definite progress. The army rate has been reduced to one-fifth of its former level, by a continuously applied effort. Much more must be done by all coordinated agencies in the expanded war army, and in civil communities.

In this present effort against prostitution should suppression or regulation be used? Well, in my opinion, any single method or combination of methods really proved of value should be used. One thing is certain—that you can't really regulate anything effectively that cannot be definitely controlled. It is better to get rid of a menace by putting it out of bounds and out of reach than by making it easily accessible.

Major General Charles Reynolds, Ret., says this in the "Military Surgeon" December 1940:

> "Prostitution must be recognized as a Fifth Column in our midst to be dealt with accordingly. Without restraint, the forces of prostitution can decimate a military command. These forces strike the moment mobilization and concentration begin, and hang on the flanks of the forces as they move from one theatre of operation to another. Modern ways of life have changed the tactics of prostitution to keep it current with the change of method of war. As Colonel Dunham, Medical Corps, U. S. Army, puts it, 'Prostitution has been motorized while the Army has been mechanized. The operation of a motorized and mechanized force cover a wide territory calling for a more universal cooperation by local health boards, police officers and military commanders.'"

Colonel Dunham in Preventive Military Medicine has this to say of the "regulation" method of controlling prostitutes: "Regulation of prostitution serves to promote rather than to limit the spread of venereal disease, so far as troops are concerned. This method of control augments the accessibility of the prostitute and facilitates the practice of prostitution. The medical inspection of prostitutes as practiced under the conditions which surround prostitution is of no value in detecting or eliminating the infected prostitute." One has only to personally check the "controlled areas" in tropical countries and in some of our states to realize the truth of the quoted statement.

On the other hand, attempted suppression of prostitution implies Health Department and police cooperation for law enforcement, restriction by preventing houses of prostitution and catching those on wheels. Prostitution can thus be made difficult and decidedly unattractive, though not entirely eliminated in any given locality.

Just what practical cooperative steps has the army recently taken to coordinate its own antivenereal work with that of the U. S. Public Health, State Health Departments and private welfare organizations? And what have these organizations done and what can they further do to increase their already enthusiastically given services?

In letters from the War Department dated September and December 16, 1940 to the Commanding Generals of all Corps Areas, Department Commanders, and Armies, their close cooperation is directed with the U. S. Public Health Service, the Surgeon Generals of the Army and Navy, State Health Authorities, and the American Social Hygiene Society and any other recognized private welfare agencies, in order to prevent the spread of Venereal disease among troops as well as to protect the civil population.

In connection with this program an Officer of the U.S.P.H. Service was authorized to be detailed to each Corps Area Headquarters.

The letters of December 16, 1940, referred to above, directed compliance with a plan drawn up at a conference of the Surgeon Generals of the Army, Navy and U. S. Public Health Service, approved by the Secretaries of War and Navy and Administrator of the Federal Security Agency. So you see there are plenty of people interested. It's our little job, working together, to make it work.

The provisions of this directed plan cover:

1. Early diagnosis and treatment of civilians by the local health departments.
2. Early diagnosis and treatment of Army and Navy patients infected with venereal disease.
3. Reporting by Army and Navy Medical Officers of venereal cases to state and local health authorities.
4. Report of contacts of enlisted men with infected civilians to Medical Officers of the Army and Navy, the local or state health authorities.
5. Forcible isolation of recalcitrant infected persons with Gonorrhea or Syphilis during period of communicability. Health Officers and local police officials concerned in this detention of civilians.
6. Decrease of opportunity for contact with infected persons—local police to be responsible for *repression* of commercialized and clandestine prostitution. Local Health Departments, the State Health Department, the U.S.P.H.S., and the Army and Navy to cooperate with local authorities in *repressing* prostitution.
7. An aggressive program of education both among enlisted personnel and civilian population concerning the nature and dangers of infection, methods of prevention and steps to be taken if a person suspects he is infected.
8. The local police, Health Authorities, State Health Department., U.S.P.H.S., Army and Navy desire the assistance of representatives of the American Social Hygiene Association or affiliated social hygiene societies or other voluntary welfare organizations or groups in developing and stimulating public support for the above measures.

The necessity for control of the use of alcoholic beverages on military reservations and in their vicinity is also stressed by the War Department letter of December 16, 1940. Irresponsibility of action due to the use of liquor and exposure to venereal disease go hand in hand.

With the practical, enthusiastic support of pub-

lic and private Welfare Agencies, the Army will use every legitimate weapon to meet the individual and mass attack of an enemy forever on the march against soldier and civilian alike.

PNEUMOTHORAX IN AMBULATORY PATIENTS*

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In 1935 Cole and Harper reported our experience in the treatment of 68 patients who were given pneumothorax and either remained, or soon thereafter, became ambulatory. Concerning this treatment we stated that these patients were hospitalized in a general hospital for a short period of time for the institution of pneumothorax. When a successful pneumothorax was established, patients were permitted to return home and report to the office for refills. The usual period of hospitalization was five to ten days, sometimes longer. These 68 patients reported on previously are included in this follow-up of 234 patients. At the time of the previous paper 9 of the 68 patients were dead, and since the publication of this paper six years ago, 5 additional of these patients have died. Since the behavior of this group of patients is very similar to the entire group no further effort will be made to separate them.

In this paper we wish to report on our experience in the treatment of 234 patients in private practice who were considered suitable for, and in whom pneumothorax was attempted. In most of the patients pneumothorax has been instituted in a general hospital and a few in a sanatorium. In a few patients pneumothorax was either unsuccessful or inadequate, and in addition continued bed rest was utilized, but otherwise these patients have become ambulatory immediately or soon after pneumothorax was established. There were a number of patients requiring additional or supplementary collapse measures who were again ambulatory soon after the employment of these measures. For example, on occasion we have utilized apical thoracoplasty in conjunction with pneumothorax for cavity closure and the patient has become ambulatory within two or three weeks following the operation. So far as we have been able to determine these patients have done as well as they could have done with additional prolonged bed rest.

Our experience with a larger group of sanatorium patients convinces us that ambulatory treatment is by no means suitable for all patients with tuberculosis, but we do believe that by and large there is a tendency to over-hospitalize the tuberculous and that available beds are often not used to the best advantage for the greater number. This practice is now being applied extensively in Virginia so that there are now some 500 indigent pneumothorax patients under treatment by private physicians at home and not in sanatoria, thus releasing beds which are needed for other patients.

Of the 234 private patients for whom pneumothorax was thought suitable and was, therefore, attempted, there were 198 for whom collapse by pneumothorax was sufficiently adequate to justify its continuance. In the remaining 36 patients collapse by pneumothorax was either impossible or so inadequate that it was promptly abandoned and substitute therapy was utilized. In retrospect we doubt that we have abandoned pneumothorax too soon in any of these patients, although in a few instances it was persisted in too long after some other procedure should have been substituted.

DEATHS: Of the 234 patients 39 are dead. Of these, 31 died of tuberculosis and 8 from causes unrelated to tuberculosis after their disease had healed. In 21, or more than one-half of the total deaths, tuberculosis was never controlled either because of a tuberculous pneumonia with overwhelming infection, or because of advanced disease which failed to respond to collapse therapy plus the complete rest which was therefore mandatory. These patients are included with our ambulatory cases because they were considered for ambulatory treatment and despite the fact that they never became ambulatory. In only 11 patients where tuberculosis was once controlled and the patient became ambu-

*Read at the annual meeting of the Medical Society of Virginia at Virginia Beach, October 6-8, 1941.

latory has relapse occurred and death resulted from tuberculosis. Of the 8 who died of causes unrelated to tuberculosis, 4 died of carcinoma, 1 from coronary thrombosis, 1 from cerebral hemorrhage, 1 from gun shot wound, and 1 from sub-phrenic abscess. From this experience we are led to hope that few of our present ambulatory patients, approximately 75, still taking pneumothorax will die primarily of tuberculosis. In our experience the ultimate recovery of patients whose tuberculosis is once controlled by pneumothorax is not necessarily governed by surplus or prolonged rest. We consider adequate rest a necessity, and surplus rest a luxury, for, in our experience, patients who are so situated that they can take abundant prolonged rest have done no better either temporarily or permanently than similar patients for whom earning a livelihood was a necessity. In this latter group we have had no laborers and but few patients whose work required excessively long hours, so by resting when not working they have been able to hold their positions without great difficulty.

Of the 195 living patients, 160 are either working or are able to work full time, and 19 part-time. Twelve patients are unable to do any work and of these 6 are relapsing. Concerning 4 patients, we have no recent information and these are considered lost.

In 36 patients pneumothorax was unsuccessful and, therefore, promptly abandoned. Of these, 17 are dead. Of the 36 patients, 27 were given some other type of collapse. Ten phrenic nerve operations, and 22 thoracoplasties were done. Eleven of this group are among the dead. Nine patients had no other collapse measure, and of these 6 are dead, and 3 are relapsing or are unable to work. The high mortality in this group may be accounted for by the inability to control the tuberculosis. Few of the deaths resulted from relapses. Also, only a few of this group became well enough to become ambulatory.

PATIENTS REQUIRING ADDITIONAL MEASURES TO AUGMENT COLLAPSE: Fifty-two patients in whom pneumothorax was continued, required additional measures to augment collapse. Of these, 14 had pneumonolysis, 15 phrenic nerve operations, 22 contralateral pneumothorax, and 9 thoracoplasty. As will be noted, some of these patients required more than one of these procedures. Of this group of patients, 7 are dead, 3 are relapsing and are expected to die of tuberculosis, 6 are improving though not working and recovery is anticipated. Thirty-six are working or the equivalent. Pneumothorax alone was inadequate in this group of patients. Interestingly, in these patients the tuberculosis could be controlled by collapse and, therefore, they could soon regain an ambulatory status following any of the surgical measures utilized, even thoracoplasty.

In 146 patients unilateral pneumothorax was maintained without the aid of any supplementary or contralateral measure. Of these, 15 are dead and 4 have been lost. Of the 127 patients known to be living, 120 are able to work full time and 7 part-time.

PLEURAL FLUIDS: Eighty patients had pleural fluid requiring aspiration and the fluid was studied. Fifty-eight of the fluids were cultured for tubercle bacilli, and 49 of these showed an organism culturally and morphologically identical with tubercle bacilli. Nine were repeatedly negative on culture. Prior to 1933 fluids were not cultured. Fluids from 22 patients were not cultured, but were injected into guinea pigs. Of these, 7 were positive and 15 were negative. Since 1933 we have routinely cultured all fluids, and have discontinued routine guinea pig inoculations, but have used this procedure for study of special cases and also for determining the pathogenicity of some of the cultures.

EMPYEMA: Twenty-four patients in whom pneumothorax was maintained developed empyema. Seven of these are dead. Of the 7 who died, the presence of empyema was definitely a contributing factor in the death of 3. The remaining 4 died of causes unrelated to the empyema, and in 3 of these the empyema had long since cleared. Two patients had cloudy fluid at the time of death. One of these died as the result of spontaneous rupture of the contralateral lung and the other from generalized miliary tuberculosis following removal of a tuberculous epididymis. Also, 2 patients in whom pneumothorax was unsuccessful developed empyema. One of these died of a progression of tuberculosis and the other is still living and the empyema has healed, although he has an apical cavity which we have been unable to close by thoracoplasty. Of 17 patients in whom pneumothorax was successful, all of whom are living and the empyema healed, 16 are able to work. Five of these patients still have pneumothorax and 3 of these occasionally have a recurrence of clear fluid. Two patients have re-

quired thoracoplasty to obliterate the pleural space caused by the unre-expanded lung. In 9 of these patients the lung has re-expanded without difficulty and the patients have remained well.

DURATION OF EMPYEMA IN LIVING PATIENTS: In 8 patients empyema cleared in less than a year. In 7 other patients empyema persisted more than a year, but less than two years. In 2 patients the empyema was treated for two years before it cleared and 1 patient required more than three years of aspiration and irrigation before the fluid became clear, and eventually disappeared. In all of these patients empyema was treated as a complication of pneumothorax, and the lung was not permitted to re-expand until we were convinced that the pulmonary lesion had healed. In retrospect it is obvious that a prolonged tedious period of aspiration and irrigation could have been obviated by the application of oleothorax or thoracoplasty, but we feel that our end result is better since the re-expanded lung represents a salvage and none of these have relapsed. None of these patients has shown sufficient evidence of bronchopleural fistula for this condition to have been diagnosed and none has required surgical drainage.

PLEURAL EFFUSION PRIOR TO THE INDUCTION OF PNEUMOTHORAX: Eighteen patients had pleural effusion prior to the institution of pneumothorax. Of these 10 had more or less advanced pulmonary tuberculosis and 8 showed little or no lung involvement. The group showing pulmonary tuberculosis were treated with pneumothorax until the lung had healed. In the group with no demonstrable lung involvement the fluid was aspirated and replaced with air and this pneumothorax maintained until we were reasonably certain there was no demonstrable lung pathology. Four of these patients have continued well four to five years, and 4 patients from five to fifteen years, and so far none has subsequently developed pulmonary lesions. The 10 patients showing lung pathology were treated as other patients with similar pathology and the fluid as an effusion complicating pneumothorax.

TUBERCULOUS TRACHEOBRONCHITIS: Of 7 patients having tuberculous tracheobronchitis as a complication, 3 are dead and 2 are relapsing. The other 2 are apparently doing well. Their ulcerations are healed and sputum has been consistently negative for tubercle bacilli. We look upon this as a dreaded complication and in our small experience is not the result of pneumothorax since 5 of these 7 patients showed evidence of tracheobronchitis prior to the institution of pneumothorax. In the 2 patients who have recovered from this complication we feel that pneumothorax has made recovery possible by controlling the lung lesion. In 1 of these, bilateral pneumothorax was necessary.

PREGNANCY: Fourteen pneumothorax patients became pregnant while under treatment. Pregnancy was approved in 6 of these, and it so happens that all of these were carried to term and delivered normal babies. None of these 6 was made worse by pregnancy. The first of these was twelve years ago. This patient's lung has been re-expanded for ten years, and the patient has remained well. So far as we can determine there is no evidence of infection in these six children.

Against advice 8 patients became pregnant, and 7 were made worse by pregnancy. Four of these are dead. Not one of the 4 became stabilized following the relapse incident to pregnancy. Despite our good fortune with these 6 patients in whom pregnancy was permitted, we feel that pregnancy is a real hazard for the tuberculous patient. In no instance has a second pregnancy been permitted.

RECURRENCE OF POSITIVE SPUTUM AFTER PNEUMOTHORAX: In 23 patients tubercle bacilli recurred in the sputum after conversion by pneumothorax. Development of a lesion in the contralateral lung accounted for 15 of these. Five resulted from a recurring tracheobronchitis which had temporarily subsided. Three resulted from re-opening of a cavity in the collapsed lung. In 10 of these 23 patients sputum was again converted and has remained negative as the result of additional collapse measures. Of the 13 patients whose sputum we could not re-convert, 9 are dead.

Subsequent to collapse we were able to culture an organism having the morphological and cultural characteristics of tubercle bacilli but non-pathogenic to guinea pig from the sputum of 13 patients whose sputum was negative by all other methods of examination. We have theorized that these are tubercle bacilli so near killed as to become avirulent, but we have no proof of this. At any rate we have taken this as a warning signal and have watched these patients even more closely than usual. At present we consider this finding alone sufficient reason to continue pneumothorax until subsequent repeated cultures have been negative. Interestingly

enough, in 5 of these patients the collapsed lung was being re-expanded when this phenomenon occurred. We consider this an additional reason for controlled re-expansion. We have made no other change in any of these patients because of this finding.

Thirty-five patients were collapsed without demonstrating tubercle bacilli in the sputum. In 8 of these bacilli were subsequently recovered from pleural fluid. These include emergencies such as hemorrhage and massive pleurisy with effusion.

PNEUMONIC TUBERCULOSIS: Seventeen patients were collapsed because of an extensive tuberculous pneumonia. Six of these are dead. Eleven have made good recovery and in 3 pneumothorax is being continued.

DISCONTINUANCE OF PNEUMOTHORAX AND RE-EXPANSION OF THE LUNG: Pneumothorax has been purposely discontinued in 83 patients and the lung has re-expanded. Three of these developed an obliterative pleuritis after lung had been collapsed sufficiently long for the tuberculosis to heal and re-expansion considered to be permissible. No effort was made to maintain collapse in these patients. In other instances obliterative pleuritis has developed early, but we have been able to control this with positive pressure. In this group of 83 patients, 4 are dead and 4 have been lost. Of the 4 who died, 2 died of tuberculosis, 1 of an automobile accident and 1 of a gun shot wound. Of the 4 who have been lost, all were living and apparently well when last heard from three to five years ago. Of the 75 re-expanded cases known to be living, 73 are able to do some work, and the majority are working full time. One patient has tuberculous tracheobronchitis, and is expected to die. Another who quit treatment against advice developed tuberculosis in the contralateral lung ten years following re-expansion, during which time she was twice married and once pregnant.

CONDITION OF LUNG FOLLOWING RE-EXPANSION: Eighteen patients whose lungs have re-expanded have more or less atelectasis, fibrosis and mediastinal displacement. Of this number, 4 patients have had phrenic operations to relieve symptoms caused by diaphragmatic adhesions. Two have had thoracoplasties because of unre-expandable lung. Only 3 patients of the entire group now have symptoms as a result of atelectasis, torsion or mediastinal displacement. In none of these are symptoms sufficiently severe to necessitate surgery.

Eventual lung re-expansion is anticipated throughout pneumothorax therapy in our patients so we endeavor to avoid lung fixation from protracted fluid or continued excessive collapse of the undiseased portion of the lung. Also, if adhesions are not interfering with selective collapse, we refrain from cutting these since we find them helpful in eventual re-expansion. Pneumothorax is discontinued slowly and gradually. We endeavor to prevent pleural symphysis until maximum lung re-expansion is obtained. This method often requires one to two years for complete re-expansion, but we feel that so long as the lung can be coaxed to re-expand, pneumothorax should not be discontinued abruptly.

The development of effusion during re-expansion is frequent, and we attribute its occurrence to permitting the negative pressure to become excessive, and the inability of the lung to rapidly re-expand. We endeavor to avoid this by giving small refills of air at fairly frequent intervals, and thereby endeavor to keep the pull on the lung as constant as possible. On rare occasions we have had an old cavity to re-open when the lung was almost re-expanded, and have then found the pneumothorax handy.

We have had two patients develop a hemorrhagic effusion following re-expansion. We thought that we were dealing with a hemorrhagic pleuritis until one of these died as the result of an accident, and at autopsy the lung was found to be completely healed and the pleura, although thickened, was smooth. The bleeding was the result of a severed adhesion.

DISCUSSION

DR. FRANK B. STAFFORD, Charlottesville: Dr. Cole has covered this subject so fully that it is hardly worth while for me to say very much. There are a few comments, however, that I want to make on his excellent paper.

Dr. Cole's statistical tables are very instructive, and also are excellent. He reports 234 patients treated with pneumothorax, with a successful or satisfactory therapeutic collapse in 198 of the cases. That is as good as any one of us can do, and better than most of us can do. We feel that we are lucky if we can satisfactorily collapse sixty per cent of the cases of pneumothorax that we attempt.

In treating pulmonary tuberculosis today, it is almost considered neglect of the patient if we fail to give pneumothorax to those cases that are suitable for it. Unfortunately, not all of them are suitable for pneumothorax, but those who are suitable, and to whom it can be given, should have it. To give an illustration, of the patients that come to Blue Ridge Sanatorium, we attempt some

form of collapse on about seventy per cent of the cases that have definite tuberculosis. We receive some patients in whom the diagnosis is not definite and do not need collapse. But in about seven out of ten cases pneumothorax is tried, and with the aid of intrapleural pneumonolysis, we succeed in collapsing about fifty-five per cent of the cases successfully.

Dr. Cole pointed out the difference between a patient with adequate collapse and one with inadequate collapse. Certainly it is folly to continue with a patient in whom you are not getting beneficial results. Abandon the procedure in favor of something else.

There are three objects to be attained in treating pulmonary tuberculosis. The first is to convert the sputum from positive to negative. The second factor involved is to get the diseased lung to heal as rapidly as possible. The third is to get the patient free of toxicity. When that is accomplished the symptoms will subside. Those three objectives are certainly reached more quickly through collapse therapy than by letting the patient go to bed and rest out his disease, as we formerly did. So, in all cases that come to the Sanatorium that are suitable we try pneumothorax. If the pneumothorax is not satisfactory we abandon it and try something else.

Dr. Cole referred to pleural effusion. He probably has a lower rate of pleural effusion as a complication of pneumothorax than most institutions. We run an average of 150 patients that are under collapse therapy (pneumothorax). We find about 50 to 60 per cent of those cases have pleural effusion after being under pneumothorax for as long as twelve months. There are perhaps more of these patients who have pleural effusions, but we do not recognize it. Pleural effusion as referred to here implies that which can be seen under the fluoroscope.

In reference to simple pleural effusions, we are still perhaps getting too many patients coming to the Sanatorium who have previously had fluid formation, mostly tuberculous in origin, from whom the fluid has been removed before they came in and was not replaced with air. We do not know, of course, the cause for all pleural effusions in tuberculosis, but in most cases we have a collection of tubercles on the pleurae and the irritation coming from that source may cause the effusion. If the fluid is removed and no air introduced, the inflamed pleural surfaces will come together, stick and pleural adhesions will be the result. So we believe that a certain amount of air should be introduced to keep those surfaces apart. Then, as the inflamed surfaces heal and the air is absorbed, you have more nearly normal pleural membranes coming together.

We inferred from Dr. Cole's paper that he had about 11 of these 198 pneumothorax cases that had tuberculous empyema. That is very, very low. One is lucky, usually, to hold the incidence of empyema down to 10 or 12 per cent. We run about 12 per cent with our cases. When we say "empyema", do not confuse tuberculous empyema with a mixed or pyogenic form of empyema.

The treatment of tuberculosis has been essentially revolutionized recently with this collapse-therapy program. We feel that, everything else being equal, all of those cases who have tuberculosis, particularly if they have unilateral lesions (though we do give it to bilateral cases), especially the classical cases with bacilli in the sputum, should have an attempt made at pneumothorax.

One thing which should be emphasized at this point is: Try these people with tuberculosis on pneumothorax, and if you cannot collapse them in that way, try something else that will give definite results rather than let them remain in a sanatorium, or in a general hospital, or at home and lie in bed for weeks or months with very, very slow recovery, and possibly at the end of two or three years (or more than that in some instances) the results are perhaps not as good as they would have been under collapse therapy. The patient will still have the disease, and maybe in an active form, and even though they may be asymptomatic, they will relapse when they are gotten up and out of bed and subjected to much physical strain.

DR. FRANK S. JOHNS, Richmond: I should like to make a few remarks in regard to the surgical aspect of this important subject. First of all, I wish to commend Dr. Cole for his enterprise in treating these cases. I am satisfied that tuberculosis is one disease that really needs energetic treatment. "It is not a lazy man's disease." If these patients are allowed to drift along on a purely medical regime, without some other aid, they will get complications involving more surgical problems than necessary. But if they are handled in an enterprising, energetic way from the beginning, we will get the results Dr. Cole has shown us this morning.

Dr. Cole's very low percentage of complications certainly deserves comment. I refer to the small number of empyemas he has had in this series. Surely it is not a hit-or-miss proposition when he cites 198 cases with so few empyemas; it is entirely the way these patients are treated. And I think the large majority are medical problems.

This year, before the American Association for Thoracic Surgery there was quite a discussion of empyema from the surgical standpoint. We rarely see a tuberculous empyema among Dr. Cole's patients who needs surgical attention. I believe this is due to the way these cases are handled by Dr. Cole.

Dr. Cole touched on pregnancy in tuberculosis patients. I have had a striking illustration of the subject in our office force. One of our secretaries developed tuberculosis. The first time she had a little spotting, Dr. Cole saw her and rayed her, and she had a definite cavity. We put her in our own hospital, and he gave her pneumothorax immediately. She returned to work in thirty days and went right on and in about two years was married. In due time, when Dr. Cole thought it wise, she became pregnant and went through successfully. I think if these cases can be very carefully supervised, they may be allowed to go on through pregnancy; otherwise, they should be aborted immediately.

A report from Michigan gave a most interesting re-

view of their experience. More than ten years ago they showed that they were using collapse therapy in some form in 77 per cent of their cases. I believe that these figures are too low now. If tubercular patients have cavities, they must be closed. If you leave the cavities open, many of these patients will die and the remaining will be invalids. This is one condition that needs energetic treatment.

DR. COLE, closing the discussion: I do not wish to prolong this, Mr. Chairman, but I do want to thank the gentlemen for their discussion.

I wish to mention one thing that was not brought out, bilateral collapse. We have had a number of patients with bilateral pneumothorax. They are more difficult to handle, but many of them will get along well.

Again I thank you for the discussion.

VAGINAL SMEARS AS AN AID TO THERAPY IN GYNECOLOGY*

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Norfolk, Virginia.

The method of study of the sexual cycle in animals by means of vaginal smears was introduced by Stockard and Papanicolaou in 1917. In 1933, Papanicolaou published his classic monograph, "The Sexual Cycle in the Human Female as Revealed by Vaginal Smears". Continuing to add to our knowledge of this subject, Papanicolaou published the following articles: "The Use of Vaginal Smears as a Method of Evaluating the Action of Ovarian Follicular Hormones"; "Action of Gonadotropic Hormones in Amenorrhea as Evaluated by Vaginal Smears"; "Suppressive Action of Testosterone Propionate in Menstruation and its effect on Vaginal Smears"; "The Diagnostic Value of Vaginal Smears in Carcinoma of the Uterus".

Interest in the subject has been greatly stimulated and articles based on vaginal smear studies have appeared from Shorr, Fletcher, Geist and Salmon, Ucko, Rubenstein, Bennett, Schneider. Rubenstein's article most clearly supplements Papanicolaou's original monograph and should be read by all interested in the subject. So often does one read in scientific papers the expression, "The response as indicated by vaginal smears", that I feel no apology is necessary for bringing this timely subject again to your attention. To the skeptical, it should be pointed out that Papanicolaou's original work came from the Department of Anatomy, Cornell University Medical College and the Woman's Hospital, New York City, and Rubenstein's researches, aided by a grant from the Rockefeller Foundation, were carried out at the Brush Foundation and the Gynecological Out-Patient Department of Western Reserve University School of Medicine, Cleveland, Ohio. We welcome one more method of scientifically diagnosing and treating functional disorders in gynecology.

The vaginal smear technique is based on the fact that the vaginal secretion—consisting of exfoliated epithelial cells from the vaginal wall—is a true index of the state of the vaginal mucosa and that the vaginal mucosa undergoes constant changes under the influence of ovarian hormone activity. Scientific data has been forthcoming to prove this conception. Geist and Salmon, by means of vaginal biopsies, found that vaginal smears accurately reflected the degree of regression and regeneration of the vaginal mucosa. Rubenstein and Duncan have demonstrated a close correlation between the human vaginal smear changes and the urinary estrogen assay.

METHOD OF TAKING THE VAGINAL SMEARS

The most commonly employed method of taking vaginal smears is that of Papanicolaou. A blunt tipped glass pipette with a good rubber bulb on the other end is introduced into the posterior fornix of the vagina, and the vaginal fluid with its cellular content is aspirated into the tip of the pipette. While aspirating, the tip of the pipette is moved from one side of the fornix to the other so that all parts are contacted. The vaginal material is spread upon one end of the surface of a clean microscopic slide. The slides are plunged into a solution of equal parts of ninety-five per cent alcohol and ether at once, before drying takes place, which causes loss of cellular detail and staining properties. The fixation does not require more than a few minutes, but smears may be kept in the alcohol-ether solution as long as a week. Rubenstein obtains his smears by removing vaginal secretion of the posterior fornix with a wire loop. Bennett simply inserts a moistened cotton

*Read at the meeting of the Medical Society of Virginia at Virginia Beach, October 6-8, 1941.

tipped applicator well into the vagina, and swabs the posterior and lateral walls. Bennett does not fix his slides, claiming greater detail thereby.

For practical purposes, it is satisfactory to have the patient make her own slides. We order for each patient a special bulb-capped glass pipette or a number of cotton tipped swabs, a box of numbered slides, and a jar containing equal parts of ninety-five per cent alcohol and ether. The subjects are instructed to prepare their own smears and to drop the slides immediately into the alcohol-ether mixture where they are kept until brought to the office. Wire paper clips or dental floss may be used to keep the slides apart. Smears are made daily, every two or three days, or once a week, depending on the problems at hand. No douches are allowed before taking the smears. Any chronic vaginal infection must be irradicated before relying on the vaginal smear method.

STAINING OF THE SMEARS

The technique of staining the smears usually employed is that of Papanicolaou, using haematoxylin, eosin and waterblue. As the details of this technique are not always at hand, we repeat the method here.

Slides are first stained with Ehrlich's haematoxylin for about five minutes, then carried into running water for at least a quarter of an hour. After this they are stained with a 0.5 per cent eosin for about three to four minutes, rinsed well in water, and finally stained for one minute in a 0.5 per cent solution of waterblue. Following this they are rinsed well in water and then carried through fifty per cent, seventy per cent, eighty per cent, and ninety-five per cent, and absolute alcohol into xylol and mounted in Canada balsam. The stain is permanent and does not fade easily.

With this stain, the cornified cells, which are almost constantly present in the vagina, take an intense red (eosin) color and are sharply differentiated. Cells derived from the deeper vaginal layers which are free from cornification are stained strongly blue. Partly cornified cells show various shades of purple. Superficial secretory cells, containing mucus, display characteristic bluish purple tones.

Numerous other staining techniques have been recently described purporting to bring out greater detail and to simplify the procedure. Reference is made to the methods of Shorr, Geist and Salmon, and Fletcher. Bennett uses the gram stain, gentian violet, gram iodine, carbol fuchsin.

Of the various staining methods, the simplest is that of Geist and Salmon. The vaginal secretion is diluted with a little normal saline, spread on a glass slide, allowed to dry in the air and then stained for one minute with fuchsin.

We have found most satisfactory and have been using a modification of Papanicolaou's method described by Ucko which is as follows:

Methylated spirit is poured on the smear and allowed to remain for two minutes. It is then removed and the film is stained for twenty minutes with a diluted Giemsa solution, prepared by adding ten drops of the standard Giemsa solution to five cc. of distilled water. The slide is then washed with distilled water, and allowed to dry. A drop of Canada balsam is put on and a cover glass applied. This method has the advantage over the fuchsin and grams stain, for it produces the color variations important for the diagnosis of cornification. Entirely cornified vaginal epithelium cells are stained red, partly cornified cells violet, and non-cornified cells blue.

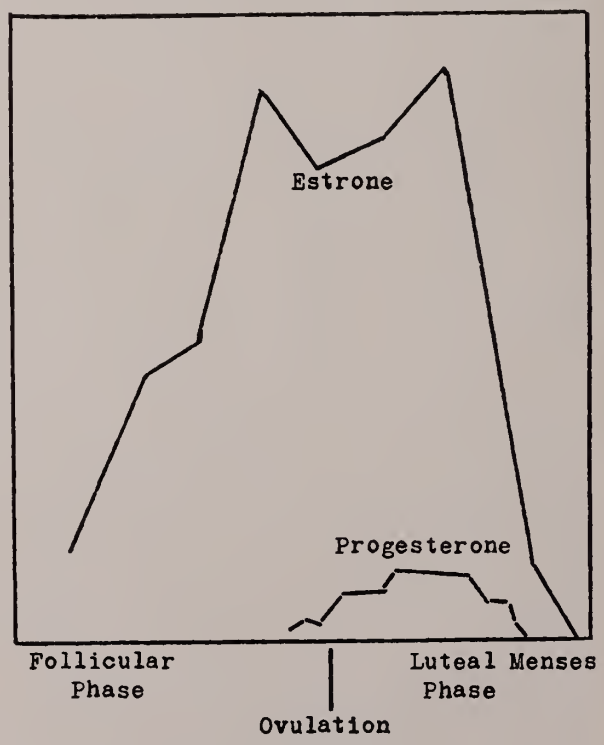

Fig. 1.—The estrone and progesterone curve of the normal menstrual cycle.

THE GONADAL CYCLE

The sequence of maturation of follicles, ovulation and corpus lutein formation is known to all. The fluctuations of estrone and progesterone are pictured in the graph (Fig. 1) modified from the Mayo Clinic. Note that the height of estrone production is in the luteal phase. Note the beginning of progesterone production just before ovulation. The progesterone curve was obtained from estimations of pregnandiol excretion.

THE VAGINAL CYCLE

As already intimated, the vaginal smear method is based on the fact that just as there is a uterine cycle, so also is there a vaginal cycle, both the result of cyclical activity of the ovary. According to Rubenstein, the gonadal and vaginal cycle may be correlated as follows: The gonadal and vaginal cycles begin with or after menstruation with the singling out of one of the immature follicles to undergo a process of growth and maturation. As the follicle grows, it elaborates the hormone, estrone, which stimulates proliferation in the uterus and vagina. As the follicle matures, some of its lining cells change their function and form lutein cells, even before ovulation.

The pre-ovulative formation of lutein cells starts the production of progesterone and the secretory phase in the uterine mucosa and the vagina. After ovulation, the corpus luteum filled with lutein cells continues the production of both estrone and progesterone. Since estrone causes proliferation and progesterone secretion of the uterine and vaginal mucosa, proliferation and secretion go hand in hand in this phase. In the vagina progesterone effect not only causes secretion but also marked increase in desquamation. A few days before menstruation, the corpus luteum begins to regress, providing that pregnancy does not occur. There is a rapid progressive diminution in production of estrone and progesterone, the uterine mucosa exfoliates with menstruation, the vaginal mucosa, progressively less stimulated, regresses.

The vaginal cycle thus consists of proliferation during the follicular phase, proliferation, secretion, desquamation, regression, during the luteal phase. The vaginal smears reflect this cycle as follows: attention is paid chiefly to the epithelial cells, which represent desquamated mucosa cells. During the stage of estrone production and vaginal mucosa proliferation, the smears consist of squamous epithelial cells with large vesicular nuclei and granular cytoplasm. As maturation of the ovarian follicle progresses, proliferation of the vaginal mucosa increases, but the epithelial cells seen in the smears show gradually increasing pycnosis of the nuclei, gradual disappearance of the granules in their cytoplasm, and replacement of the cytoplasm by a horny material, keratin. These changes are known as cornification. The vaginal mucosa has become so thick-layered that the super-epithelial cells have grown farther and farther away from their blood supply and have undergone this degenerative process. Pycnosis, a cardinal sign of cornification, refers to condensation of nuclear material, the large vesicular nuclei becoming small and dense. Keratinization of these cornified cells is indicated in the smear by the deep eosin (red) stain the cells take. Cornified cells appear at the height of estrone production and are characteristically large and red staining, with agranular cytoplasm and pycnotic nuclei. The nuclei of completely cornified cells disintegrate into fragments and even disappear. This is evidence of maximum unopposed estrone effort.

With the formation of lutein cells just before ovulation and the rapid increase of progesterone with ovulation, the secretory phase of the vaginal cycle is indicated in the vaginal smears by degeneration and increased desquamation of the epithelial cells. There is no longer unopposed estrone effect. Progesterone has the ascendancy over estrone. The cells become clumped together, their cytoplasm wrinkled, their edges rolled and scalloped, their cytoplasm, usually agranular, shows evidence of vacuolization.

A few days before menstruation, with regression of the corpus luteum in the absence of fertilization, the rapid diminution of production of both estrone and progesterone causes a similar rapid thinning of the vaginal mucosa. The sloughed off epithelial cells break up into fragments. In the smears the cells appear faded and broken into halves or parts, only one part, perhaps, containing a nucleus. Cell debris is typical of the premenstrual smear. Cell and nuclei outlines are indistinct. The smear is dirty.

The follicular stage of the gonadal cycle is thus evidenced by progressive cornification of the epithelial cells and the degree of cornification may be taken as a measure of estrone production. Maximum

cornification usually occurs just before ovulation, or under the influence of forced estrone therapy, due to unopposed estrone activity. The corpus luteum stage of the cycle is indicated in the smears by increased desquamation and degeneration of cells fully or partly cornified. The premenstrual stage is characterized by marked degeneration. The cells regress, break up under low hormone effect. The features of the vaginal cycle as reflected in the epithelial cells of the vaginal smears are recapitulated in the accompanying table.

FIG. 2.
THE VAGINAL CYCLE AS REFLECTED IN THE EPITHELIAL CELLS OF VAGINAL SMEARS.

Follicular (post-menstrual) phase. Beginning estrone effect.
Epithelial cells become increasingly large with granular cytoplasm and vesicular nuclei. Cells stain bluish or purple.

Pre-ovulatory—Maximum unopposed estrone effect.
Epithelial cells become cornified, cytoplasm stains red, becomes agranular. Nuclei become pycnotic or fragmentary.

Ovulatory—First evidence of progesterone effect.
Similar to the pre-ovulatory stage, but increased desquamation. Epithelial cells appear in flat placques, like shingles. Some cells show early effect of progesterone (rolling and scalloping of their edges). The smear is very clean.

Post-ovulatory—Estrone and progesterone effect with progesterone in ascendency.
Epithelial cells clump or aggregate, their edges roll and scallop. Their cytoplasm becomes wrinkled and vacuolated. Desquamation is faster than proliferation. The desquamated cells are degenerating. There is a reversal of the process of cornification. Cell cytoplasm is progessively less keratinized. Nuclei progessively larger and more vesicular.

Pre-menstrual—Phase of low hormone effect of both estrone and progesterone.
Epithelial cells fade and break into fragments. Cell and nuclei outlines become indistinct. The smear is dirty. The broken up condition of the cells is characteristic.

Rubenstein has divided the epithelial cells most commonly seen in vaginal smears into eight types. The first four represent progressive cornification. The fifth and sixth represent progesterone effect, desquamation and degeneration of cornified and partly cornified cells; the seventh type reflects the breaking up of cells characteristic of the premenstrual phase. Type eight is the so-called "deep or basal" cell, described by Papanicolaou as evidence of vaginal atrophy as seen in the menopause or in primary ovarian amenorrhea. It is not seen in the normally menstruating woman.

Whereas the most important elements in the vaginal smears are the epithelial cells, since these most accurately reflect the gonadal activity, other elements are present to varying degrees in most smears, bacteria, leucocytes, mucus, fibrin, red blood cells. Bacteria and leucocytes are usually abundant in phases of low hormone content and progressively diminish with increasing estrone production. The ovulatory smears are characteristically "clear" (only a few bacteria) and leucopenic—only a few leucocytes. After ovulation, there is a marked influx of leucocytes and more and more bacteria are also present. Bennett describes certain puffed leucocytes characteristically present among the few leucocytes of the ovulatory smears. The same author claims that during the proliferative phase of gonadal activity, the bacteria present are predominantly gram negative cocci, while those of the late luteal phase are predominantly gram positive bacilli. We have tried repeatedly to confirm this, but have been unable to get the consistent results claimed by Bennett. However, the gram stain, which is the technique used by Bennett, has been very difficult for us to use satisfactorily.

MUCUS

Some thin mucus is present in post-menstrual smears but it becomes more and more watery and less and less apparent with maturation of the ovary until there is usually no recognizable mucus at ovulation. Mucus is abundant in the post-ovulatory and luteal phase due to the secretory effect of progesterone. A few red blood cells are at times seen in ovulatory smears. Fibrin and, of course, many red blood cells are seen at menstruation.

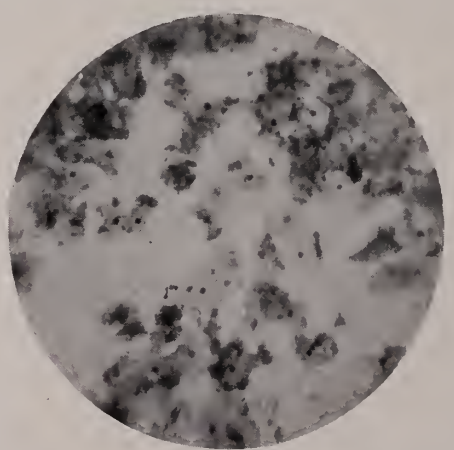

Fig. 3.—Seven days post-menstrual. Under the influence of estrone, the epithelial cells are becoming increasingly large with granular cytoplasm and vesicular nuclei.

When we first tackled the vaginal smear method,

it seemed vague, intricate and unsatisfactory. The hardest phase of the study was the acquisition of a suitable staining technique. Thereafter, familiarity with the smear types was soon acquired. We learned to recognize the smear patterns of the normal menstrual cycle and to interpret abnormal findings. Proliferative, ovulatory, and luteal smears became recognizable. We began to sense the degree of estrone or progesterone effect presented. Our work is still in the embryonal stage and this paper is based primarily on the researches of others. We are showing a few of our slides just to indicate how easily the vaginal smear method adapts itself to the facilities of a small office laboratory.

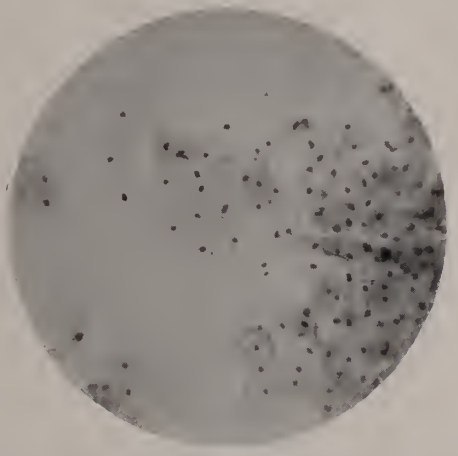

Fig. 4.—Ovulation. Epithelial cells are cornified and appear in flat placques, like shingles. The smear is very clean.

THE PRACTICAL APPLICATION OF THE VAGINAL SMEAR METHOD

Space permits only a brief description of the practical uses of the vaginal smear technique. The method has been used most popularly to recognize (1) minor degrees of estrone deficiency as in hypo-ovarianism or as in the menopause. (2) To recognize estrone response and to determine the quantity of estrone necessary to get full estrone effect. (3) To indicate the probable time of ovulation and suggest hormone deficiency existing in sterility cases. The present theory of estrone-progesterone imbalance as the cause of many other functional disorders, such as mastodynia, pre-menstrual tension, dysmenorrhea, menorrhagia, suggests other instances in which further research will prove the method to be of value.

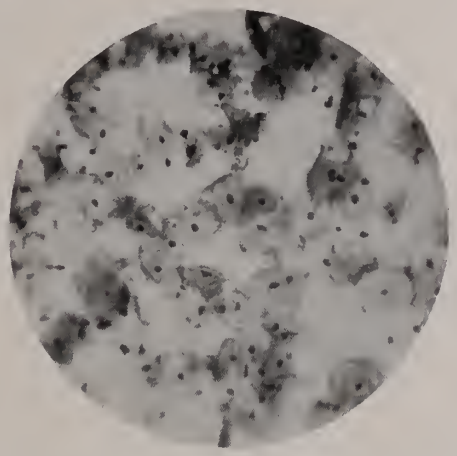

Fig. 6.—Three days pre-menstrual. Marked desquamation at the height of progesterone activity.

STERILITY STUDIED

Smears indicate the probable time of ovulation and thus optimal time for marital relations or artificial insemination, help detect anovulatory mens-

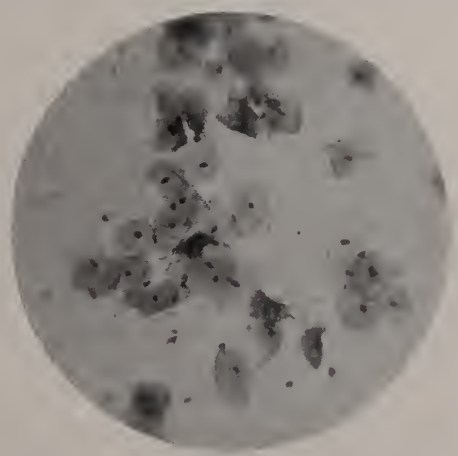

Fig. 5.—Seven days pre-menstrual. Under the influence of progesterone the epithelial cells clump, their edges roll and scallop, their cytoplasm becomes wrinkled and vacuolated.

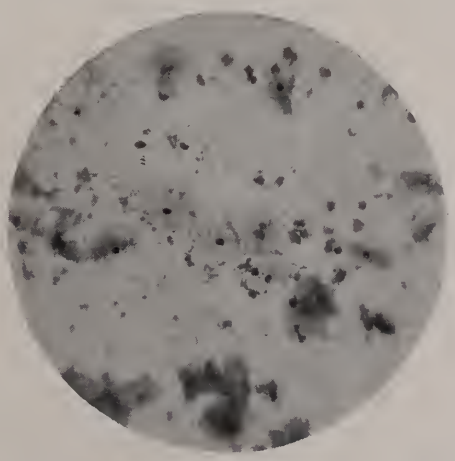

Fig. 7.—One day pre-menstrual. Marked reduction in estrone and progesterone causes the epithelial cells to fade and break into fragments. Cell and nuclei outlines become indistinct. The smear is very dirty.

truation, indicate estrone or progresterone lack in the normally menstruating woman, pointing out the time and nature of treatment needed to correct the deficiency. A poor progesterone phase could readily account for failure of implantation. Progesterone therapy guided by vaginal smears has proven corrective in some cases. Ovulation during menstruation is not too uncommon a cause of sterility and explains the pregnancy that occurs following coitus at this time. Smears readily indicate this cause of sterility. It should be noted that the time of ovulation cannot be detected from a single smear examination. It is best recognized by comparison with preceding and subsequent smears.

Amenorrhea and hypo-ovarianism: Vaginal smears indicate the degree of estrone deficiency in primary amenorrhea, associated with an infantile uterus. Atrophic smears with "deep cells" are seen; the smears resemble that of the menopausal or castrate patient. In secondary amenorrhea, smears reflecting low estrone activity, such as in the post-menstrual or pre-menstrual smear, are seen. When estrone therapy is begun the smear method is the simplest and most accurate index of adequacy and frequency of dosage. The smears show increasing proliferation to full cornification as treatment progresses. Secondary amenorrhea is usually treated by gonadotropic substances, preferably that of pregnant mare serum, or from the pituitary gland (gonadotropic factor of Armour). If true gonadotropic effect is obtained, the vaginal smears should reflect the increased ovarian activity.

Menorrhagia

Androgen therapy seems to be replacing chorionic gonadotropic substances, such as A.P.L. or follutein. For a thorough trial of androgens which suppress both ovarian hormones, atrophic smears should be obtained.

Pregnancy

Bennett, Papanicolaou, Rubenstein all claim vaginal smears aid in the early diagnosis of pregnancy. The progesterone phase is still found on the day the period is expected, instead of the broken up "smear" characteristic of the late pre-menstrual phase. Bennett goes further, stating that threatened abortion, toxemia and premature labor may be anticipated by following the vaginal smears. Fletcher has been able to diagnose incomplete abortion by the vaginal smear method. The active denudation of the vaginal mucosa that follows parturition is accompanied by the appearance of characteristic outer basal or pavement cells in numbers equal to or more prominent than the usual superficial epithelial cells.

Leucorrhea

Smear studies often present opportunities for individualization of therapy in leucorrhea. For instance, occasionally one finds many large cornified cells from masturbation or excessive sexual activity and androgen rather than estrone becomes the therapy of choice.

Gonorrheal Vaginitis

Vaginal smears offer the best means of guiding the estrogenic therapy.

Senile Vaginitis

As described subsequently, characteristic smear findings indicate the degree of estrone lack. Smears enable one to visualize the vaginal response to specific therapy, estrone. An excessively dry vagina may not always respond to estrone alone. Smears may indicate that combined estrone and progresterone therapy are necessary to obtain the secretory and desquamatory effect desired.

Carcimona of the Uterus

Recently Papanicolaou and Traut have demonstrated that cervical and uterine cancer may be revealed by the vaginal smear method. Cells are seen which do not fall into the categories of any of the cell types found in the smear of normal women. They are thought to be derived from the superficial layers of the malignant lesion.

Last, but not least, we wish to describe the most frequently employed and the most practical uses of the vaginal smear method, the diagnosis of the menopausal state and of other degrees of hypo-ovarianism and the response of these conditions to estrone therapy.

The Menopause

At menopause, the vaginal mucosa becomes thin and atrophic and as a result the vaginal secretions are altered. Characteristic changes, which are practically never seen in normally menstruating women are seen in the vaginal smears. Again, we are indebted to Papanicolaou and Shorr, who have so accurately described these findings. In advanced atrophy the smears show numerous compact, round or oval cells with rather large round or oval nuclei.

These cells are derived from the deeper layers of the vaginal mucosa, and are known as "deep or basal" cells, seen only in the smears of primary amenorrhea, the menopause and after parturition. In the menopause, their presence is the result of thinning of the vaginal mucosa, and the absence of well developed superficial layers of squamous epithelial cells of the normal vagina. The menopausal smears also show some leucocytes and red blood cells and bacteria. Leucocytes are present, due to their unhampered migration through the thin mucosal wall. Fibrin may be present and the erythrocytes may be fragmentary. There is a moderate amount of mucus.

The bacterial flora is generally rich, giving a dirty appearance to the smear. The increase in bacteria may be attributed to the decrease in desquamatory and secretory processes with prolonged retention of the cellular debris within the vagina.

When the mucosal atrophy is less marked, the number of "deep" cells varies from great abundance to almost complete absence, and the superficial cells become more prominent. However, the superficial cells bear evidence of low estrone activity, form irregular clumps, lack sharpness of cellular outline and structure. Geist and Salmon divide their vaginal smears into four main classifications, according to the relative proportion of atrophic or deep cells, and partly or wholly cornified cells present.

As a result of sustained treatment with ovarian follicular hormone, uniform and characteristic changes occur in the vaginal smears. Mucus appears, leucocytes and erythrocytes disappear. Deep cells are no longer seen and all other cells are replaced by large flat well outlined cells, many of these cornified with small pycnotic nuclei. Bacteria disappear and the smears take on a clear appearance. If therapy is adequate, the smears are similar to those at the height of follicular activity, as seen at ovulation in the normal menstruating woman.

There are just as definite regressive changes if estrone therapy is reduced or discontinued. Numerous deep cells are seen, the large and cornified epithelial cells disappear, and bacteria and leucocytes again become prominent.

With such definite fluctuations in smear findings, correlated so closely to ovarian activity, the vaginal smears find their greatest field of usefulness to date. Minor unsuspected degrees of estrone deficiency are detected and specific therapy applied where neurosis would otherwise be diagnosed. Symptoms of the menopause are more accurately evaluated. The relief of flushes is no longer taken as a criterion of adequate therapy. Dosage is pushed to follicular effect, as seen in the smears. The frequency and amount of estrone necessary to maintain full therapeutic effect is likewise scientifically ascertained. Persistence of symptoms in the presence of vaginal smears showing full follicular effect suggests that one should look for other real or psychic causes of these symptoms. Or a maintained follicular type of smear in the absence of estrone therapy might suggest androgen therapy.

Before closing, we should like to reiterate the theoretical value of the vaginal smear method in this heyday of miscellaneous hormone therapy. Reference has already been made to the response to be expected in the smears from estrone, progesterone, and gonadotropic principles and androgen. Some light should be thrown on the value of estrone and progesterone products by mouth by the vaginal smear evaluation method. Likewise, in the newer field of subcutaneous implantation of pellets of estrone, progesterone and androgen, the smears should be of inestimable value in studying the amount and duration of their effect and the time for additional implantation.

CONCLUSION

Vaginal smears reflect the state of the vaginal mucosa and are thus an index of ovarian hormone activity. Characteristic smear fluctuations occur throughout the monthly cycle of the normally menstruating woman, with definite follicular, ovulative, and luteal phases. Vaginal smears of menopausal patients have classic patterns. There are definite smear changes in response to hormone therapy, especially in response to the ovarian follicular hormone. The vaginal smear method is relatively simple and practical, and may frequently replace more complicated procedures such as endometrial biopsies and biological assays. Present usefulness of the method has been confined chiefly to the diagnosis of minor and major degrees of ovarian deficiency and to the recognition of estrone response and to the estimation of the estrone necessary to get and maintain full estrone effect. Offering a means of deter-

mining the probable time of ovulation, the method has theoretical value in the sterility problem.

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Medical Arts Building.

DISCUSSION

DR. WAVERLY R. PAYNE, Newport News: You who have heard Dr. Lowenberg's paper only once cannot fully appreciate the amount of work involved in its preparation. I had the advantage of reading it as much as I liked, and each time found something new. My only criticism is that the doctor could have written several good papers with this amount of material.

Every patient whose history and physical examination suggests an endocrine disturbance presents the problem of determining the degree of disturbance and also the problem of adjusting the dosage of therapeutic measures. The basal metabolism test and the endometrial biopsy are relatively simple procedures compared with the highly specialized technique of determining the amount of hormone excretion by laboratory methods.

Every physician whose clientele includes women is daily confronted with the very real problem of differentiating between symptoms produced by the true menopause and those of neurogenic or psychogenic origin. We must agree that they may be similar in every respect. This leads to the observation that a fairly large percentage of cases are mislabeled and treated unwisely with estrogenic hormone without getting any relief of symptoms. It is my opinion that Dr. Lowenberg's discussion relating to the technique and interpretation of vaginal smears represents one of the most outstanding recent advances in the entire field of gynecology.

In closing, I want to urge you to make a more complete study of this very fine paper when it appears in the VIRGINIA MEDICAL MONTHLY.

DR. LOWENBERG, closing discussion: I am sorry I had to read this paper so fast as there are many practical uses of vaginal smears to bring out, for instance, the detection of the period of ovulation and the use of this knowledge for artifical insemination even when using the husband as a donor.

Dr. Payne asked me about the staining method. This was our greatest problem because we had difficulty in getting good results for a long while. We found that the Ucko method which is a modification of the Giemsa stain is most satisfactory and simplest for our purposes. Methylated spirits, which can be obtained from any pharmaceutical house, is poured on the smear and allowed to remain for two minutes; wash off and stain the smear for twenty minutes with freshly diluted Giemsa solution (1:15); wash the slide; let it dry and mount with Canada Balsam and a cover glass.

Dr. Payne asked of the value that vaginal smears had been in detecting the menopause and hypo-ovarianism. The smears enable one to estimate the degree of estrogen lack in the menopause and will often enable one to detect hypo-ovarianism in the regular menstruating woman. The smears also enable one to decide on the amount of estrogen therapy necessary to correct the deficiency at menopause.

THE DIAGNOSIS OF PRIMARY CUTANEOUS BLASTOMYCOSIS (GILCHRIST'S DISEASE)*

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and
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Cutaneous blastomycosis was described by Gilchrist[1] in 1894. The following description of "protozoan dermatitis" appeared in the Proceedings of the American Dermatological Association: "The protozoa were shown under the microscope. They were very numerous, sixty sometimes being in the field. Twenty have been found in one giant cell. A dog had been inoculated, the same disease reproduced and protozoa being found. Dr. Gilchrist considered the bodies as belonging to the vegetable rather than to the animal kingdom."

According to Castellani,[2] the term blastomycosis includes all conditions which are caused by yeast-like or budding fungi. In the United States it is used to denote a clinical entity characterized by the presence of granulomatous verrucoid lesions in which fungi of the blastomycete type are found.

*From the Department of Dermatology and Syphilology of the Medical College of Virginia.

The causative fungus was named Blastomyces dermatitidis by Gilchrist and Stokes[3] because they thought that the organism belonged to a group of yeasts which were non-fermenting and produced mycelia on artificial culture media. In this paper the cutaneous type will be considered, with especial emphasis on differential diagnosis.

The disease is most frequently encountered in middle-aged males of the lower working classes. Many cases have been observed in the Middle West, especially around Chicago. A number of cases have been reported from Virginia. Anderson[4] of Norfolk states that he has a number of cases under treatment the year round.

Stober[5] has contributed some observations regarding some of the possible sources of infection. He makes the following statement in regard to the growth of the organism: "No difficulty was experienced in obtaining growths on sterile moist bread, paper, cardboard, cotton, sawdust, fruit and vegetables". He investigated the living quarters of some of his patients, and in one he was able to obtain a mold from damp wood which closely resembled the organism of blastomycosis. A history of trauma may be obtained in some instances, that is, barb wire scratch, injury at autopsy and injury while walking barefoot. No definite instance of contagion has been reported.

The clinical features of blastomycosis have been admirably described by F. H. Montgomery.[6] The cutaneous lesions are usually located on the exposed parts of the body. Thus, the face, ears, neck, wrists, hands and legs are the favorite sites. The initial lesion is a papule, or papulo-pustule, which gradually enlarges either by peripheral extension or the appearance of new foci. A crust usually covers the whole area, which may attain a diameter of six or eight inches. When the crust is removed a papillomatous wart-like surface is exposed, which is bathed in a seropurulent secretion. These papillary elevations are made up of the miliary abscesses which are characteristic of blastomycosis (Fig. 1). There may be bleeding, and at times the lesion may look like an ulcer with unhealthy granulation tissue. The border of the lesion is most characteristic. It has a violaceous or dusky red hue and is elevated (eighth of an inch to three-eighths of an inch), and slopes abruptly to the normal skin. Here, with the aid of a hand lens, the yellow pin-point-sized miliary abscesses may be seen.

The course of the disease is irregular. Generally, healing begins in the center, with a soft, supple, non-contractile scar. Some of the miliary abscesses remain in the scar for a long time; they are probably responsible for the relapses.

Fig. 1.—Blastomycosis dorsal aspect of wrist.

A tentative diagnosis of blastomycosis may be made when the organisms are present in the pus, or in excised tissue. The diagnosis is established beyond doubt when Blastomyces dermatitidis is obtained in a culture from the lesion. Skin tests and complement fixation reactions may be resorted to.

Examination of the pus is easily done. Several droplets of pus may be obtained by applying pressure to the border of the lesion. A slide is touched

Fig. 2.—Budding organisms. Note artefacts.

to one or two of these and a drop of aqueous potassium or sodium hydrate solution (ten to thirty per cent) is mixed with the pus. With the high dry lens the organisms appear as round, doubly contoured highly refractile bodies from five to twelve

microns in diameter. Budding and figure of eight arrangements are fairly frequent (Fig. 2). Tap water[7] may be substituted for the hydrate solution with some advantage. By this procedure the confusing artefacts formed by the fats (in the pus) and the hydrates are eliminated.[8,9] A drop of the

Fig. 3.—Baso-squamous cell cancer. Note rolled border.

pure pus may also be examined. The cover glass is rimmed with vaseline and the preparation kept at room temperature for twenty-four to forty-eight hours. After this period of time budding and mycelial filaments may be seen, which points to the suspected structure as being a fungus. The organism is easily identified in sections of excised tissue stained with hematoxylin and eosin.

Cultures of the fungus may be obtained by planting the pus on suitable media. One of the best is Sabouraud's dextrose agar. Martin and Smith[10] suggest that some of the suspected material should be inoculated on blood agar plates. They believe that blood in the medium may be of help in isolating some of the strains. They have also succeeded in maintaining the yeast-like form of the organism on blood agar plates.

Sections of excised tissue stained with hematoxylin and eosin show hyperplasia of the epithelium. The downgrowth of the rete cones results in areas of the corium being enclosed. These areas resemble the true epithelial abscesses. Polymorphonuclear leucocytes can be seen throughout the epithelium. The epithelial abscesses are formed by collections of these leucocytes, and in addition they may contain the blastomycetes and giant cells. The corium is the seat of chronic inflammation also. Here plasma cells, lymphocytes, polymorphonuclear leucocytes, giant cells, and some blastomycetes are found.[11]

A tuberculin like skin reaction may be obtained with a heat-killed suspension of blastomycetes in some cutaneous cases.[12] In cutaneous cases the complement fixation reaction is usually negative.

There are a number of cutaneous lesions which have to be differentiated from blastomycosis. Stober[4] has made the following statement: "blastomycosis should be ruled out in all cases of chronic pustular and ulcerative lesions of the skin . . ."

Fig. 4.—Bromoderma located on calf.

Clinically, tuberculosis verrucosa cutis and blastomycosis are very similar. This lesion is produced by the direct inoculation of the tubercle bacillus into the skin. It is most often encountered in individuals suffering from pulmonary tuberculosis, but

may occasionally be seen in butchers who have handled infected meat. The favorite site is the dorsum of the hands. This may be explained by the fact that after coughing the phthisic patients wipe off the lips with the backs of the hands. The acid fast bacillus may be found in the excised tissue in some cases. Guinea pig inoculation will confirm the diagnosis of tuberculosis.

Fungating papillomatous lesions are sometimes encountered in cutaneous cancer. In blastomycosis the lesions are usually multiple, whereas in carcinoma they are single. The cauliflower-like lesions are seen most frequently in basal cell epithelioma. A close inspection of the margin will reveal the typical pearly, waxy raised, or rolled, border (Fig. 3). Superficial telangiectatic vessels may course over the pearly nodules. The miliary abscesses seen in the border of blastomycosis are absent in cancer. In some areas of basal cell epithelioma, healing may take place which results in an atrophic scar not

Fig. 5.—Tinea barbae

unlike that seen in healed blastomycosis. Fungating baso-squamous and squamous cell cancer are not so common. When they do occur, they are generally found on the dorsum of the hand. The presence of pre-epitheliomatous keratosis would favor the diagnosis of cancer. Histological examination will clinch the diagnosis for malignancy.

The ingestion of bromine or iodine in certain individuals produces vegetating cutaneous lesions (Fig. 4). A clue may be obtained from the history. The bromides are more frequent offenders than the iodides. In 1909, Ormsby[13] of Chicago reported a series of cases of bromide eruptions that were mistaken for blastomycosis. Clinically, the lesions of bromoderma may present the raised papillomatous purplish-red border, with clearing in the center. Wile[14] has recently described a simple test for the detection of bromine in the urine. More recently blood bromide determinations have become popular. Wiener[15] has observed a case of vegetating iododerma which was clinically indistinguishable from a bromoderma. In the above instances the withdrawal of the offending drugs and increased salt intake should be of diagnostic and therapeutic value.

In most of the standard textbooks of dermatology tertiary syphilis (vegetating type) is considered as one of the important lesions to be differentiated from blastomycosis. Stokes[16] states: "The lesions of blastomycosis are the least likely granulomas to be confused with late syphilids, yet confusion can and does occur." In considering the diagnosis of bromoderma and late syphilid, Stokes[17] makes the following statement about the border of the bromoderma: "The border, however, is papillomatous, and a papillomatous border practically eliminates syphilis." The history and Wassermann reaction are of help in ruling out syphilis. Harris[18] of Chicago has shown that blastomycosis often responds to arsphenamine therapy. Obviously the non-specific effect of this drug and the iodides are of no help in arriving at the diagnosis.

There is another fungus infection of the exposed surface, namely, tinea barbae (Fig. 5). This disease is rather uncommon. It is usually seen in farmers who give a history of having been in contact with infected cattle. The granulomatous lesions occur in the bearded area. There is much pus, but the violacous color of blastomycosis is not present. The hairs are easily pulled out. These patients may have a fever and in general may be quite sick. In cutaneous blastomycosis the patient rarely, if ever, has constitutional symptoms. The pus of tinea barbae contains the spores and mycelia. Mycelia are never found in the pus or tissue of blastomycosis.

Sporotrichosis is characterized by multiple cutaneous and subcutaneous nodules in linear arrangement, usually on the upper extremity. Very often a history of abrasion can be obtained. The diagnosis is made by aspirating one of the nodules and isolating and identifying the organism on culture media. The pus may also be inoculated into the peritoneal cavity of a rat. This produces an orchitis and the organism can be found in great abundance.

Actinomycosis involves the skin secondarily. Nodules and draining sinuses occur on the lateral

aspects of the neck. Sulphur granules are found in the pus and sections of excised tissue. The organism can be identified by culture.

Only a few more words will be added concerning some of the more rare granulomas which may be encountered. Coccidioidal granuloma is endemic in the San Joaquin Valley of California. It is caused by Coccidioides immitis, which is easily identified by the endospores. Chromoblastomycosis, which is rare in the United States, is characterized by verrucous lesions of the extremities. The organism is seen as brown sclerotic cells in sections of excised tissue. Torulosis involves the central nervous system but in rare instances skin lesions have been observed. Smith and Hitch[19] have reported a granuloma of the upper extremity in a case of tularemia. Here the history and agglutination tests help in arriving at the proper diagnosis.

The lesions of cutaneous blastomycosis respond well to roentgen ray irradiation and iodides internally. The iodides should be forced to the limit of tolerance. Prompt treatment of cutaneous lesions will usually insure the patient against systemic involvement which, if it does occur, is almost invariably fatal.

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Professional Building.

NEUROSURGERY IN THE TREATMENT OF INTRACTABLE PAIN*

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Pain is undoubtedly the principal reason for our existence as a profession. I have, therefore, chosen as my subject neurosurgery in the treatment of intractable pain. Time does not permit nor the title justify a discussion of pain as a symptom of remediable disease outside the nervous system. The pain associated with stones in the biliary and urinary tracts, or with inflammations, is well known and its treatment recognized as having to do with the removal of the inciting cause. The severe headaches and sharp pains associated with tumors, compressions and abscesses of the brain and spinal cord are known, and here, again, the treatment is directed to the removal of the inciting cause. This principle of treating or removing the cause of illness, deformity or pain when possible is universally accepted; and it is not my purpose to discuss the treatment of such conditions.

I wish rather to call your attention to some conditions for the relief of which surgical treatment is

*Read before the Tazewell County (Va.) Medical Society, November, 1941.

directed to the nervous system itself. As Cutler has so aptly stated, "the surgeon must always bear in mind this rule: before any operation is undertaken that has for its primary object the denervation of a painful part he must prove to himself that a direct attack on the lesion is impossible."

In some of the following conditions we attack both the lesion and the nerves from the lesion at the same time; in others, we disconnect the central nervous system from the site of painful stimulus, and in still further conditions, in order to cure pain, we break up a reflex arc which seems to play a role in both the production and reception of pain as the patient experiences it. Let us consider, first, post-traumatic headache or that syndrome of uncomfortable symptoms which frequently appears following injury to the brain or its coverings.

Penfield, in 1927, first described the classical symptoms of this condition and recommended a treatment by lumbar air insufflation into the subarachnoid space. As he has emphasized, not all cases of headache can be successfully treated by the injection of air. The criteria for the selection of these cases are:

1. Headache definitely localized to one area, often near the site of injury or inflammation and occasionally in the contracoup position. The headache is usually dull and hammering.

2. Dizziness, lightness in the head or a far-away feeling, which often lasts for several minutes without a sense of rotation. This vertigo without signs of cerebellar or vestibular disease is often brought on by stooping, rising or walking, and the patient likes to have some support to keep from falling. He often notices the dizziness when he bends over to tie his shoes in the morning.

3. Those headaches accompanied by a history of head injury or of inflammation in the central nervous system.

Treatment which has proven so successful in many of these patients is that of insufflation of air into the subarachnoid space, the patient lying on the side opposite the site of the headache with his head slightly elevated. This may be done through a lumbar puncture needle or directly through a burr hole in the skull. For the spinal insufflation the usual careful technique of an encephalogram is used, but an effort is made to fill the subarachnoid space rather than the ventricles of the brain, and filtered air is preferred to oxygen, as it requires longer for absorption. X-rays are taken and usually show the spotty mottling which is characteristic of adhesions in the meninges with slight cortical atrophy. When the patient is returned to bed his head is rotated from side to side every five minutes for one hour by a nurse. This movement causes the air to change its position and tends to break up the filamentous adhesions and relax tension on vascular or meningeal nerve fibers which are associated with brain scarring and headache. It also occasionally helps drain localized collections of intra-meningeal fluid.

As there are occasionally those patients with adhesions so dense that air alone will not free the meninges, local trepanation of the skull over the point of maximum headache followed by mechanical division of adhesions is sometimes necessary. Two of my recent patients who were not relieved of headaches by encephalograms were relieved by ventriculograms and the only explanation I can give is that by opening the subdural space there was produced sufficient change in the relationship between the meninges, brain and vascular sinuses to relieve the tension on the nerve connections, or that subdural fluid in excess of normal was allowed to drain out under the scalp. This fluid was noticed at operation in one of the patients.

Major trigeminal neuralgia was perhaps first described in the second volume of the publication of the "Imperial Leopoldinian Academy of Natural Sciences", 1671, as the disease afflicting its founder and first president, Johannes Laurentius Bausch. The condition is well known to all of us as an affliction of undetermined etiology, causing attacks of sharp lancinating, excruciating, paroxysmal pain in some part of the face or forehead, appearing spontaneously or brought on through the stimulation of a so-called trigger zone, by eating, drinking, brushing the teeth, talking, shaving, washing the face or even smiling. The pain is often referred to the teeth and we frequently see unfortunate patients who have sacrificed sound teeth in the hope of relief from the pain.

The treatment consists of alcoholic injection of the branch of the trigeminal which is involved or operation with pre-ganglionic section of the sensory root of the fifth nerve. Differential section of the sensory nerve root with preservation of the corneal fibers and motor trunk has replaced the older

operations of gasserian ganglionectomy, complete evulsion of the roots, etc.

Although this affliction is not as common in Virginia and West Virginia as it is in the localities with colder climates, I have seen and treated several patients here and I believe they are among my most grateful patients. One of them is an example of trigeminal neuralgia with the trigger zone in one division and the pain in another division of the nerve. This man had severe, lancinating pain in the right forehead which was so great that he could not do his work. He had been treated with local heat and diathermy, medicines, etc., but without relief. I injected his supra-orbital nerve and finally obtained complete anesthesia of the right forehead without relief of the pain. Being rather at a loss to know why he had failed to obtain relief despite the anesthesia, I questioned him again about his pain. It was then found that although the pain always limited itself to the right forehead it often appeared as he started to eat his meal. The right third division was then injected and complete relief of the pain in the forehead was obtained. He is well to date.

We use four parts alcohol and one part ether for these injections and anesthetize first with a few drops of 2% novocaine. All patients with trigeminal neuralgia should first have an alcoholic injection, even if they are to be operated upon, for they will then experience the loss of sensation and the surgeon will know whether with anesthesia relief will come. Further, with alcoholic injection sensation will eventually return and the pain may not; but with operation the sensation is gone not to return and there are some people who, when confronted with this outlook, having never experienced anesthesia previously, will become wild, irrational or psychotic despite relief of pain.

I have recently seen a patient who illustrates the danger of operation for facial neuralgia or head pain without preliminary alcoholic injection. Mrs. C. had pain in her right temporal region, of burning nature, which later spread down to the edge of the lower jaw in 1938. In 1940, a posterior root section of the right fifth in the posterior fossa was done in another clinic, without preliminary alcoholic injection. Recently I saw her for the first time. She had anesthesia of the right side of her face but there was rather a wide margin of the right lower jaw not affected, and the anesthesia stopped rather far forward in the temporal region. The burning was chiefly in the right temple and always began there but sometimes seemed to spread to the malar region, where there was objective anesthesia. Thinking the fifth root section might be incomplete, I injected the right gasserian ganglion with novocaine, in fact, with enough novocaine so that temporary paralysis of the right motor fifth was obtained and the right third was affected, causing dilatation of the right pupil. The pain persisted. The right stellate ganglion was then injected, producing a tyical flush of the face with right Horner's syndrome without relief of the burning. I was nonplussed and at a loss to understand the situation. The woman was, I believed, neither a malingerer nor a case of hysteria. She then mentioned a feeling of pressure or fullness at a point in her neck which corresponded exactly to the point of exit of the greater auricular nerve from behind the sterno-cleido-mastoid. I injected this point with 10 c.c. of novocaine, 1%, and the patient immediately said her burning pain was gone. It did not return for over three hours. A second and third injection with novocaine caused relief for varying lengths of time and on each return of pain it seemed less pronounced. I offered alcoholic injection or rhizotomy but the patient felt so much better that she said she would go home and would come back if her pain returned. I have not seen her again, so I hope that she is well.

Had alcoholic or novocaine injection of the right fifth nerve or ganglion been done as a preliminary procedure in this case the patient might have avoided her root section and the surgeon would have been able to look for the real source of the pain.

Alcoholic injection is the procedure of choice in old or debilitated individuals who would be bad risks for even the minor shock of posterior root section. Section of the fifth nerve root in the posterior fossa or of the spinal root of the fifth nerve in the medulla are valuable procedures reserved for very special cases, but, despite efforts to popularize the posterior approach, it has more potential risk to the patient than the temporal one.

Sphenopalatine neuralgia is a condition not frequently seen, but I recently had such a patient referred to me by Dr. Charles St. Clair, and the relief on treatment was so great that I feel justified in repeating the history. The young man, 19 years of age, had felt as though he had a slight cold

coming on, and the night before we saw him he had suddenly experienced most excruciating pain, radiating from the region of the ear around over the left malar region to the temple, the eye, and deep into the face. When I saw the man he was holding the left side of his head with not only his hands but his arms as well; he was doubled up and rocking back and forth on the edge of the bed. From the severity of the pain, it seemed at first that alcoholic injection of the sphenopalatine ganglion might be necessary, but, as a preliminary measure, we anesthetized the middle turbinate with metycaine and, rather to my surprise and much to the patient's relief, his pain stopped. During a two day stay in the hospital the pain did not occur and, so far as I know, there has been no recurrence to the present time. The case is interesting both because of the relief which is afforded by anesthetizing the tip of the middle turbinate and also because it illustrates the relief which can be obtained by breaking up the sensory arc in pain of autonomic origin or in which the autonomic system plays an important part. We are constantly being confronted with pain of this type, and, fortunately, the neurosurgeon now has at his disposal a number of procedures for its relief. I refer to the treatment of causalgias, pain or trophic disorders, painful stumps, peripheral spasm with hyperhydrosis and intermittent claudication, and even angina pectoris. We haven't time for detailed discussion of each condition and its treatment, but, in general, I may say that the injection of novocaine into the skin about an area of burning hyperesthesia, the injection of anesthetic in oil about an area of herpes, novocaine or alcoholic injection of the para-vertebral ganglia, or cervical, thoracic, thoraco-lumbar or lumbar sympathectomy, all have the one common purpose and result—that of breaking up the arc which plays the essential role in referred visceral and somatic pain.

In this case of sphenopalatine neuralgia we broke the arc at its beginning by stopping the irritation which initiated the stimuli causing the pain. In cases of reflex or referred pain from the viscera where there are hypersensitive areas of skin, we stop the pain by breaking the arc at the point of reference, namely, by injecting the skin itself with novocaine or novocaine in oil; or we can even break the arc in the middle, as in angina pectoris, by injecting the para-vertebral sympathetic ganglia.

Another painful condition, similar in its attacks and severity to trigeminal neuralgia, is glossopharyngeal neuralgia. This condition often having a trigger zone-like true tic with agonizing pain in the pharynx, larynx, eustachian tube or inner ear, is frequently fully as painful and incapacitating as true tic douloureux. Complete relief without motor impairment of the pharynx or larynx is produced by intracranial section of the ninth nerve in the posterior fossa through a unilateral suboccipital approach. The danger of this procedure is slight.

Pain in the arm due to compression of vessels or nerves by a cervical rib, a spastic or hypertrophied scalenus anticus muscle, or a scar or fibrous band, is best treated by the section or removal of the tissue causing the pressure, and this treatment is not by way of the nervous system *per se*. However, even this pain, and more specifically vascular pain and joint or stump pains of the arms, can frequently be completely relieved by direct attack on the sympathetic chain or dorsal nerve roots.

The pain of angina pectoris can be greatly relieved by the injection of the first four thoracic sympathetic ganglia on the left side with alcohol. This technique requires an accurate knowledge of the anatomy of the thoracic sympathetics and care in preparation of the patient. As the procedure removes only the pain and not the cause, the patient must be warned against all activity which formerly caused his pain and his family must be prepared for his possible sudden death without warning. However, to be able to give one of these patients suffering from agonizing cramps and the horrors of impending death relief from his suffering, even if perhaps it does shorten life by removal of the warning pains, seems to be eminently worthwhile.

That the pain and suffering of peripheral vascular spasm can often be relieved by injection or removal of the sympathetic nerve supply to the part is now well known. The techniques of both the injection and the procedure of sympathectomy have been sufficiently well standardized to warrent their judicious use in all neuro-surgical clinics.

I well recall one of my early experiences with a patient who complained of cold, blue, perspiring hands and aching of her fingers. Her symptoms were less marked in summer but in winter she had acute aching pain in her fingers and wore gloves even in the house. In fact, she had rather a classical picture of the second stage of Raynaud's disease. I injected both stellate ganglia with 2% novocaine, us-

ing the posterior route with the patient sitting in the upright position. Horner's syndrome appeared on both sides, the face became warm and dry, but the hands were still somewhat cool. Then gradually both hands became warm, red and dry. I now realize that some of my novocaine injection had diffused downward to affect the first, second and possibly the third thoracic ganglia. The girl was relieved of her pain and I advised sympathectomy but, as a result of this advice, she did not return as she was afraid of operation. I did not expect any permanent result from the one injection but I was surprised and pleased to hear from her sister later that the girl's hands had improved considerably following the one injection. We now know that such a result is not uncommon and that complete relief can sometimes be obtained by repeated novocaine injections alone without resorting to alcoholic injection or sympathectomy.

Recent studies have shown the close inter-relationship between pain, injury and swelling. Patients with severe sprains of the ankle have had the affected joint immediately injected with novocaine and then have gone on walking on the injured limb. Swelling is very slight, pain is negligible and healing is said to be rapid. Immediate injection of a fracture site with novocaine not only permits of painless reduction or manipulation but frequently limits swelling to a minimum and in my experience has shown no signs of delaying union. I have thought on a few occasions that the healing was more rapid than usual. Repeated injections of the lumbar sympathetic ganglia with novocaine are now being used successfully in the treatment of phlebitis of the legs.

The severe pain due to a compressing or irritative lesion of the spinal cord or its roots requires laminectomy for its relief. That relief may be obtained frequently by the direct removal of the cause of pressure or irritation. This is true in cases of operable tumor or abscess, herniation of an intervertebral disc, hypertrophy of a ligamentum flavum or bony deformity. There are, however, frequently encountered conditions where the cause of pain cannot be removed and it is of those patients and their relief that I now wish to speak.

Rhizotomy, or intradural section of the posterior nerve roots, has been found of great value in treating the pains of tabetic crisis, post-herpetic neuralgias and pains of incurable deep-seated visceral disease. Both in rhizotomy and in alcoholic injection or removal of the sympathetic ganglia for the pain of visceral disease it is often necessary to depend upon ascending spinal anesthesia to determine the dermatome level at which, with anesthesia, the pain will disappear. Para-vertebral injection with alcohol, sympathectomy or rhizotomy can then often be used to relieve pain in malignant disease of the esophagus, lungs, stomach and pancreas, and I have seen one case of yeast infection of the lung and pleura with excruciating pain relieved by high thoracic rhizotomy of only the affected side.

While my personal experience with pre-sacral neurectomy is rather limited, some of the more recent reports of studies on large series of cases indicate that we should use this procedure more for the relief of those unfortunate women who have severe, persistent and uncontrollable pain with each menstruation without gross pelvic pathology.

The subarachnoid injection of alcohol for the relief of pain due to malignancy in the pelvis or metastatic lesions of the pelvis and the lower spine is justified in some cases. It frequently gives instant and welcome relief but the value of relief of pain must be balanced against the possibility of some motor weakness and occasional bladder dysfunction which sometimes follows this intrathecal alcohol.

Finally, I want to speak about and in behalf of cordotomy or spinothalamic tract section for the relief of intractable pain. This procedure depends for its success upon the fact that pain and temperature fibers after entering the cord cross over and pass up the opposite side of the cord in the anterolateral tract.

Gowers, in 1879, and Van Gehuchten, in 1893, had predicted this location of a pain tract, but it remained for Spiller, of Pennsylvania, in 1904, to find clinical proof in a patient and suggest the procedure of anterolateral tract section. By 1911, Spiller and Martin had published the first case of cordotomy, and from that time on Spiller and Frazier, working together, refined and established the procedure as a definite and valuable forward step in clinical neurosurgery. In a clinic where the staff is trained to the details of careful laminectomy the technique of cordotomy is not difficult. The operation is best performed under para-vertebral block and

local infiltration so that the patient can respond when his sensation is tested. The site of operation for pain below the diaphragm may be in the upper thorax, or for pain in the breast or higher, operation is best done in the cervical cord.

Recently Dr. J. C. White, of Boston, has reported a case in which the patient had severe intractable pain in the right arm, shoulder and neck. She had previously had both sympathectomy and rhizotomy without relief of her pain. White did a spinothalamic tractotomy in the medulla oblongata with relief of the pain, and has described his technique in beautiful detail. This procedure should be extremely useful where other procedures fail to relieve the pain of malignant disease, vascular spasm, causalgias or amputation stump pain of the upper extremity.

Neurosurgical methods such as these are often the only means of relief for the exhausted pain-ridden sufferer from inoperable malignant disease. Cancer pain is constant and morphine wears out, as well as having many other disadvantages. Cordotomy or anterolateral tract section is an operation used too infrequently for the relief of suffering in patients with malignant disease or intractable pain from other causes.

PELVIC INJURY AS THE RESULT OF TRAUMA*

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The first consideration in studying any injury or disease is the saving of life and restoration of health and function. This is our duty to the individual, but our obligation to the public as a whole goes much further than this. When there is alleged liability for injury the doctor cannot avoid the duty of giving testimony as to the facts as he finds them. He is also called upon to interpret these facts in the form of a diagnosis and to evaluate them to some degree, particularly as to prognosis. The approximate accomplishment of these objectives requires a study of this particular case in the light of a general knowledge of the subject derived from one's own investigation and experience, and that of others as recorded in literature.

The purpose of this paper is to attempt to turn some of this light on a study of problems which have occurred and will occur again as a result of pelvic injuries. The doctor will do well to confine his efforts to the above endeavors no matter what is his relation to the injured or injurer. No matter how bad your findings are for the finances of either side they had better know the worst at once. This will be highly to the interest of the litigant whether it is pleasing or not.

Fracture of the bony pelvic girdle is one of the most prolific sources of successful litigation on the part of the injured. One insurance company has stated that it could reduce automobile insurance 10 per cent if pelvic fractures could be eliminated. Fortunately a large majority of those who do not suffer fatal injury to vital organs recover complete function in weeks or a few months. The diagnosis is usually not a matter of contention, since the X-ray gives evidence of this, but, strange to say, the X-ray sometimes gives more evidence than is actually there. No matter how well the bone heals the question of future pregnancies will arise if in the child-bearing period of life. Many of these which have some permanent deformity of the bone do not have this deformity at a point which interferes with child birth, or any other function. The claim is often made that the patient cannot give birth to a child, which is a very high priced disability. Of course, that is not really true of any woman, as a section can be done. Although I have delivered many women who had previously had a fracture of the pelvis I do not remember one which required section for that alone.

Another condition which is the occasion of contention is so-called traumatic retrodisplacement of the uterus. I have never seen one, though, according to the literature, it is evident that many writers agree and admit that acute, sudden displacement of the uterus due to trauma does occur. The picture described in these proven cases is fairly uniform and definite. Most have followed sudden falls, striking on the buttocks. It is well illustrated by the case treated by the illustrious Marion

*Read by invitation before the Seaboard Airline Railway Surgeons, Jacksonville, Fla., November 11, 1941.

Sims. The patient was an over-weight woman who was riding a pony which was suddenly frightened and jumped from under her. She fell directly on the buttocks and immediately was seized with sudden and excruciating pain in the lower abdomen and pelvis. There was extreme pressure on the rectum and bladder. Examination showed the pelvis extremely tender and the fundus was wedged into the pelvis between the sacrouterine ligaments. He placed her in the knee-chest position and used a spoon to retract the perineum, when the air rushed in and he saw the inside of the vagina as no man had seen before. In this position he replaced the fundus and immediately the patient was relieved. This was the beginning of the Sims' speculum.

Some of the cases resulted from a blow on the abdomen, particularly when the patient was in a squatting position and the bladder full. Uterine bleeding has fairly often been observed following this accident. The question may arise as to what will happen if the uterus is not replaced. Gelhorn believed that it would continue as a painful, disturbing condition. But the story of those proven cases would indicate that the pain is so severe in acute retrodisplacement that something is done. In forming an opinion in a given case it would be in order to consider the presence or absence of the above typical history, and other facts—had competent examination shown the uterus in anterior position formerly. The mere finding of a retrodisplaced uterus would not give much information, as one woman in five is said to have a retrodisplaced uterus, and the symptoms attributed to this are various and at times fantastic, and in the vast majority of cases are due to other causes.

It is generally believed that uncomplicated retrodisplacement of the uterus gives no symptoms, and this is undoubtedly true in perhaps most instances, but there are many cases which do cause symptoms of various kinds.

Backache is a standard complaint of patients who have, or suspect that they have, a retrodisplaced uterus. Bullard reports 80 per cent of 125 uncomplicated cases relieved by suspension. Replacement of the fundus and the use of the pessary is the best way to evaluate this. Those having symptoms are usually associated with various pathological conditions as chronic pelvic inflammation, endometriosis, new growths, subinvolution, childbirth injuries, and various other conditions.

One type of retrodisplacement is congenital. These are often associated with an abnormal curvature of the spine and abnormal inclination of the pelvis as described years ago by Sturmdorf. This measurement is easily made by determining the depth of the most depressed point of the spine as determined by the distance from a straight line connecting the dorsum to the sacrum. The senile uterus is normally retrodisplaced. It is quite possible, though unlikely, that some of these might be made worse by trauma; it would then be the duty of the court to evaluate the difference, if any, before and after injury, and not charge it all to trauma. It is significant that no case of retrodisplacement of the fundus has ever been observed following a crushing injury of the pelvis.

Meyer expresses the difficulties in the adjudication of such very aptly by the following sentence: "In spite of all caution and critical evaluation one will have to be content in many cases with certain probabilities in deciding the question whether the retroversion was due to the trauma. In general one will be less apt to commit an error when one rejects the traumatic etiology than when one concedes to it."

W. Raaflaub, who studied this subject extensively and who is accepted as an authority, gives the following requirements for the diagnosis of traumatic retrodisplacement:

(1) Prior to the accident the patient must have been fully capacitated to earn a living.

(2) The nature and intensity of the trauma must have been such that it could produce retroversion or retroflexion of the uterus.

(3) The lesion which has occurred must present the symptoms of traumatic retroversion of the uterus; among other things a mobile retroversion of the uterus must be present.

(4) The symptoms must disappear at once following reposition. It is obvious that traumatic retrodisplacement of the fundus of the uterus may occur, though very rarely. Only approximately 40 or 50 cases have been recorded in literature. The picture is clear cut. It is characterized by acute symptoms; sudden pain and pressure in pelvis, possibly uterine bleeding following a given type of accident, such as a sudden fall on the buttocks, or violent blow on the abdomen while the patient is in the squatting position and with full bladder. There is tenderness on pressure and the fundus is found in the culdesac. When reduced the patient

is relieved and complete recovery follows in a few days. This picture is totally different from the story usually related in accident claims.

Abortion following injury is a frequent source of litigation, or claims. Any pregnant woman can abort, with or without injury or any known cause. In order to form any reasonable conclusion it is necessary to consider all available information, such as the degree and nature of the injury, which includes a critical study of what actually happened. A study of the patient, her previous history of habitual abortion; previous injuries, childbirth injuries, congenital deformities of the uterus. Hypothyroidism, long automobile trips, and even a desire to have an abortion occur. A high score on these points with an unconvincing story of injury would cause any fair minded doctor to refrain from expressing the opinion that the abortion was due to injury resulting from the given accident.

Traumatic separation of the placenta, particularly during the latter months of pregnancy, as the result of a direct blow is a serious accident which results in death or recovery, but not prolonged disability.

Uterine bleeding following an accident has been the basis of claims. In the absence of direct trauma these may be regarded as functional and, if no other cause exists, will return to normal if not treated too much by curettage and drugs.

As suggested before, the examining physician is not expected to play the part of an attorney and he will probably make a bad failure of it if he is led into this role, but he does need to be a detective of a high order. One is often asked to examine a patient with the patient's physician. It is well to write out every detail of this examination and have the other doctor sign it if he agrees with it, or state his point of view. Otherwise, honest men have been known to change their opinions so thoroughly that they could not be recognized.

Insurance companies and carriers expect to pay for accident damage and I have no doubt if they could get exact justice they would accept it without complaint. It is the unjust penalty which is a burden on them and indirectly on the public, for it is the ordinary citizen who must pay the cost, even though indirectly. When the time arrives that the court will appoint the medical examiner, approximately exact justice will become more generally available, or accomplished. In the mean time doctors should give serious thought to these matters before giving opinions, for their own benefit as well as that of the public.

Medical Arts Building.

OTITIS MEDIA IN CHILDREN*

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The anatomical relations of the tympanic, mastoid and eustachian canal structures in the child carry with them factors which differ from those of the adult and to maintain a mental picture of these relations and gradual transition to that of its final anatomical the development is very essential. In so doing the surrounding and related structures bear an important role that mold the developing picture.

Beginning medially the eustachian canal is relatively shorter, more horizontal and its lower opening, the pharyngeal orifice, is surrounded by an overabundance of lymphatic tissue, part of the Waldeyer ring; below is the tonsillar tissue and above is the large lymphoid structure of the adenoids. Many times this structure acts as a mechanical block by extent of its hypertrophy obstructing the eustachian canal and interfering with proper physiological function. This makes it easier for infection to pass into the middle ear.

The middle ear in definition should include the tympanic cavity, with the attic, the eustachian tube, and the mastoid process.

It has been noted that the greater part of the middle ear is lined with fibro-epithelial membrane and in general it may be considered as an accessory cavity to the nose and with the mucous membrane continuous with that of the naso-pharynx. This lining is thicker in infancy, and tends to become thinner by the end of the first year of life. The eustachian canal is lined with pseudo-stratified ciliated columnar epithelium. The lining becomes flatter the further one passes from the orifice of the eustachian tube.

*Read before the Southampton County Medical Association at Franklin, Va., October 29, 1941.

The tympanic cavity is larger in proportion in early life and begins with almost adult size; it is lined with cuboidal cells interspersed with some connective tissue. Ciliated epithelium in the region of the ossicles and throughout the greater part of the tympanic cavity and mastoid cells consists of only a single layer of squamous cells. The tympanic membrane is angulated and gradually with adult growth assumes a more vertical position. In the mastoid cells there is complete pneumatization of the bone, it being flat, and does not assume the full inverted conical shape until the eighth to tenth year.

The external ear canal varies in its S-shaped angular course, the early infant contour being only smaller in size, but it maintains its normal relationship to that of the adult.

Many factors contribute to the incidence, intensity and duration of otitis media, the occurrence in a given individual and the development of extensions and complications.

It has been shown by Fowler that the young have a higher morbidity:

25 per cent from 0-2 years.
57 per cent from 2-12 years.
20 per cent from 12 years and above.

One must bear in mind here again that infants have less surface pneumatization of their mastoids and, therefore, less epithelium, a shorter and relatively larger eustachian canal, which leads to the fact that they are less likely to have severe mastoid infection. The increased adenoid tissue, however, tends to cause infection more often.

In our part of the country January, February and March seem to be the period of greatest incidence in the yearly cycle. Our records show otitis media to be greatest in the latter part of February and during the month of March. The factor of the young children being indoors with relative lack of sunlight and out in changeable weather coupled with a low immunity at this time of a year is to be considered as its primary cause.

It is considered that heredity controls the pneumatization of the mastoid, anatomy of eustachian tube and growth of the adenoids. A careful history from the parents of these patients will bear out this point. Webster has shown that hereditary factors in susceptibility and immunity to infections are of much importance.

Allergic rhinitis and food allergies tend to cause a reactionary response to the mucous and lymphoid tissues of the nose and throat and sometimes are directly the cause of stoppage of the eustachian tubes.

In routine cultures the organism of the hemolytic streptococcus is the greatest invader followed by the staphylococcus albus and aureus. Of the pneumococcic group types I and III are found more often. In the South the staphylococcus infection is the dominating type.

When infection sets in, the first pathological response is that of edema of the mucous membrane which swells to five or ten times normal thickness, followed by serous effusion into the cavity. Next, a leucocytic infiltration of the submucosa occurs and in time the cavity becomes more purulent. As fluid collects in the cavity there is an increase in hydrostatic pressure and more of the surrounding cells become involved and the secretion more purulent. If the infection in the main cavity persists a thrombophlebitis is produced in the small veins in the mastoid and petrosal areas. Destruction of the epithelium in the various regions occurs and invasion of the cavities with granulation tissue consequently is produced.

This process has its telling effects, depending upon the extent of the pathology, with healing or retrogression. The fibrotic mucous membrane and organized bands of scar tissue remain attached to the ossicles, thus inhibiting free movement and resulting in a restriction of the hearing range. A further restriction pneumatization of the mastoid process may result. Re-growth of osteoid tissue to some extent always follows the breakdown of bone and the connections between the mastoid cells and those of the mastoid antrum may be closed off. The vascularity, already poor, is rendered more so by the deficiently anastomotic cell portions. This must always be considered in dealing with persons who have a history of previous attacks of otitis media.

A classification of the forms of the various manifestations of otitis media is, in the final analysis, one of pathological phases of the ultimate step in which the inflammatory process stops at a given point.

The earliest type of middle ear infection is brought about in the young infant by a collection of mucous seeping into the tympanic area by way of the eustachian canal, more prone to do so when on its back, causing a slight irritation of the lining membrane. This is of little significance except for the danger of infection, as repetition may cause adhesions about the ossicles. The vomiting or regurgita-

tion of food in this condition makes it easier for such inflammation to take place. The hearing range is shortened and an obscure deafness may result in this mild otitis. To think of its origin when endeavoring to find an etiological factor in later life with restricted hearing range is always to be considered.

Of the non-suppurative group tubal catarrh is the mildest form. This is limited to the eustachian canal where its inflammation causes an occlusion to the tube and partial vacuum is produced by absorption of air from the area with a resulting retraction of the tympanic membrane. The symptoms of feeling of fullness, a diminution of hearing and slight tinnitus are usually all that are present. The course is afebrile, painless and lasts several hours.

With the presence of serous exudate in the above condition the secreted fluid is later to become mucoid. The symptoms remain mild but are more marked. The hearing is considerably diminished and the patient's own voice is unduly loud. Younger children occasionally cry with transitory pain and infants fret, pull at their ears or side of their face and become restless.

The ear drum has a characteristic appearance. The surface is moist and glistening. There is moderate injection and where the fluid lies against it a yellow tinge is noted. This fluid level can be noted at various angles behind the drum by tilting the head of the child. The retraction of the drum is retained throughout. Fever is present in only a few of such cases.

It has been noted by many observers that repeated attacks of such infective processes in a patient cause chronic adhesive bands to form about the tympanum. With the organization of the mucous into fibrous connective tissue the handle of the malleus is thrown inward. There is contracture of the tensor tympani muscle and a generalized fibrosis of the tympanic mucosa. A clinical picture of moderate conductive deafness results and some tinnitus is present. When fibrosis of the oval and round windows results there are symptoms simulating those of otosclerosis.

Acute purulent otitis media is considered in the supprative type. Its symptoms and course vary greatly. An upper respiratory infection or tonsillitis often precedes this infection several days. Pain in the ear is the chief complaint, becoming more severe as the inflammation progresses. It may be localized in the ear but frequently radiates to the temporal or occipital area, occasionally the neck and cheek. In younger children restlessness to generalized convulsions or meningismus may occur. Headache, vomiting, stupor, and a rigid neck may result. Vertigo is absent in children. The temperature rises, the younger the child the more abruptly, 102 to 103 degrees. It has been thought that the amount of fever in young children is due to the relatively large tympanic cavity but this idea is discredited. It is now considered that the temperature center of the brain is more easily upset by their infections. On examination, tenderness is found, especially with tragus pressure. This may also be elicited over the mastoid. The drum is congested, the blood vessels are dilated, and the surface of the membrane loses its luster, causing the loss of light reflex. Bulging occurs in a few hours, involving the posterior quadrant first. The malleus loses its prominence, and the membrane assumes a dark red hue. A yellowish area may develop on the membrane indicating the point of rupture. The bulging and intensity vary with each case and may remain localized in various segments of the tympanic membrane.

After rupture the early pus discharge is scant. A blood tinged serous fluid is later purulent and profuse in amount, lasting from a few days to several weeks. The latter becomes thicker, scantier and then gradually subsides. Pulsation of pus may be seen during the active suppuration stage. By the use of the Siegle otoscope one may note this occurrence. Suction can be applied by it to increase its discharge.

The prognosis is usually good. The discharge decreases, stops and the perforation heals. Hearing in most cases returns to normal. In those cases in which otitis media is caused by exanthemata suppuration is prone to occur in the epitympanic space. Complications here are more likely to arise. Large or marginal perforations cause moderate hearing impairment.

The treatment of otitis media should indeed begin with a complete examination of the affected area and all its related components. The examination of the throat for tonsils, lymphoid tissue about the posterior pillars and the upper pharynx, and the use of the small laryngeal mirror or digital examination of the adenoids should be done. The use of the nasopharyngoscope in obtaining a direct view of the eustachian orifices and the presence of hypertrophied lymphoid tissue aid very much in learning the extent of the child's obstructive and inflammatory factors present. In giving each local anatomical

structure a thorough examination one gains a knowledge of the related and many times the main pathological factor causing the trouble.

The first step is to consider that of prevention; a history of repeated attacks of inflammation of the tonsils and adenoids may be obtained. These structures should be removed *always*. The age factor is to be wholly disregarded; when the child is old enough to have trouble with its ears, and these agents are the cause, it is old enough to have the tonsils and adenoids removed. This cannot be stressed *too much* when these infections occur in summer months and one has the severer winter days ahead to consider.

In patients of poor hygiene, coupled with poor resistance, a complete history and physical should be always obtained. Careful and repeated questioning of the parents in all cases will bring out dormant factors in many instances. An allergy possibility must be kept in mind when considering its effects on the lymphoid structures about the eustachian orifice.

The use of the myringotomy in cases, especially those of young children, gives them great relief, by reducing the pressure in the congested tympanic cavity and by the release of pent up pus. Following this there is a rapid improvement in restlessness and temperature. This procedure should be used in the acute stages and in those of rapid forming signs and symptoms of infection in the tympanic space. The site of incision is made in the posterior upper and mid quadrant in an arc so as to cut the membrane fibers nearer the outer portion of the drum, thus enabling it to have better open drainage. It is best to incise the drum from below upward in young children and infants because of its angulation. This also makes it possible for the operator to see his line of incision, its curvature and the exudate which is more dependent and does not obstruct his view. In all cases this operative procedure is done under nitrous oxide except in young infants. The elimination of the pain factor, which is the greatest fear of the young patients, is very gratifying and future medications are done with less difficulty.

Until five years ago there was little new in the medical treatment of otitis media; now a new approach to this problem has been attained. To prescribe sulfathiazole, sulfanilamide, and sulfapyridine in the earliest stages of otitis media whether suppurative or non-suppurative has been the treatment of choice by many. These most beneficial drugs have proven to do much in lessening the complication severity that has followed this infection. There has been a great tendency to prescribe these medicines without much consideration of the course of the disease, its accompanying pathology or consideration of the limitation of the drug as its side effects. The dose prescribed must maintain sufficient level in the blood to be of therapeutic value. An estimate of the dose of one-half grain per pound of body weight every twenty-four hours is usually best to begin with. In children from 5 to 12 years seven and one-half grains five times per day and over 12 years ten grains is the best for first four or five days. A close checkup on the drug must be maintained for its side reactions such as fever, dermatitis, gastro-intestinal upset, and anemia. The hemoglobin should be taken every day when possible and at least every other day. The commonest mistake to make is that of inadequate dosage and to stop medication too soon. This should not be discontinued when the drainage disappears but kept up for five to six days afterward. In the discharging ear that has assumed a prolonged course the irrigation three or four times daily by a 5 per cent solution of sulfathiazole gives excellent results. The continuation of the oral administration of the drug then is also essential.

It is also important to keep the nasal area open, and a mild astringent is best used—neosynephrin or ephedrine in saline ¼ per cent. Do not let the patient blow his nose at this time, as it increases intratympanic pressure and may force infection further in the inflamed area. Local hygiene to the draining ear should be done by keeping the external canal clean and free from hard dry pus; warm 5 per cent sulfathiazole irrigations are very good.

CONCLUSIONS

1. A thorough physical examination should be made in all cases.

2. Obtain a careful history from the parents.

3. The sulfa drugs should be used in all cases of otitis media, under careful supervision.

4. Surgery of the ear-drum or mastoid should be carried out, when indicated.

5. Do not rely upon medication alone. The combination of the sulfa drugs and myringotomy will terminate the infection more rapidly in most cases of acute suppurative otitis media.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was a 35 year old white multipara with eleven previous pregnancies who delivered spontaneously at home on October 12, 1940. Apparently she did well until October 17th, five days postpartum, when chills, fever, nausea, and vomiting began. The information available to the committee is not entirely clear in that the attending physician states that the delivery was spontaneous and that the patient did well until she began having pain in one side, chills and fever and was sent to a hospital. The family on the other hand stated that the physician took the afterbirth as he had done on two previous occasions and that the physician "cleaned the patient out with a glove on his hand", although the time at which this procedure was carried out is not revealed.

At the time of admission to the hospital on the fifth postpartum day the temperature was 105, pulse 120, respirations 22. The patient appeared acutely ill and was tender over the lower abdomen. The note states that the uterus was "cleaned out" and an alcohol wick inserted. On November 5, 1940, twenty-four days postpartum, a pelvic examination showed an indurated mass on the left side of the pelvis "apparently not connected with either adnexa or broad ligament". Six days later examination showed that the mass had extended into the right side of the pelvis. The mass was aspirated and sero-sanguinous material obtained. Under spinal anesthesia the mass was then incised and explored with the gloved finger. No pus was found, but a few hours later there was profuse bleeding from the incision. The incision was packed and 500 cc. of plasma given. The patient went into shock and died on the following day in spite of transfusions of 1700 cc. of whole blood. During the stay in the hospital the patient was given sulfanilamide, aspirin, morphine, ergotrate, and fluids intravenously and subcutaneously.

One blood culture was positive for short chains of gram positive cocci. The hemoglobin determinations varied from 45 to 60%, white blood count from 7,900 to 22,700, red blood count from 3,010,000 to 3,810,000.

COMMENT

This has been classified as a preventable obstetrical death because of the failure to adhere to the present generally accepted procedures in the treatment of puerperal infection and the failure to refrain from procedures which are generally conceded to be harmful. Theoretically postpartum infection should be entirely preventable, but unfortunately this theoretic perfection seems unattainable at present. Infections arising in the pelvis following abortions and term deliveries not only still occur, but are the greatest single cause of obstetrical deaths. The conscientious attendant must make every effort to prevent the occurrence of infection, for here truly an ounce of prevention is worth several pounds of cure. Once infection has occurred every effort must be made to allow the defensive mechanisms of the mother resist the invasive tendencies of the infecting organism. The outcome for the mother, survival or death, is dependent upon the struggle between the resistance of the mother and the virulence of the organism. Anything which lowers the local or general resistance of the mother should be avoided or corrected if possible. Invasion of the uterus in the presence of infection is conducive of great harm to the patient, and is practically never of any help. The only indication existing for "cleaning out the uterus" or "invading the uterine cavity" postpartum is excessive hemorrhage due to retained placental fragments. Curettage of the uterus in the presence of infection breaks down the zone of leucocytic infiltration, which is a protective mechanism which the host is establishing in an effort to limit the infection to the uterine cavity. Any manipulations of the pelvic structures disturb these defense mechanisms and are usually followed by a spread of the infection to surrounding structures. In view of our present knowledge the only operative procedures justifiable in the treatment of puerperal pelvic infections, are incision and drainage of pus accumulations. Abscesses are late manifestations of the disease and are evidence that the host is localizing the disease process.

When these general principles of infection in the pelvis are applied to the present case it immediately becomes obvious why it is classified as preventable. In the present case perhaps we may assume the sequence of events to be as follows: first, the

statement of the family that the placenta was taken. If this means a manual removal of the placenta was done, it would easily explain the source of the infection. Manual removal of the placenta is a hazardous procedure because of the danger of infection, and should only be done for very definite indications and only under the most rigid aseptic precautions. Secondly, the statement appears that the "uterus was cleaned out". If this implies a second invasion of the uterine cavity at a later date, it undoubtedly played some part in the spread of the infection. At the time of admission to the hospital the uterus was again "cleaned out" and an alcohol wick inserted in the uterus, procedures which were of no value to the patient but which probably were conducive of much harm. Then a subsequent pelvic examination revealed an indurated mass on the left side of the pelvis. This mass undoubtedly represented a pelvic cellulitis or parametritis, an extension of the infection from the uterine cavity to the parametrial tissues. A later examination revealed that this inflammatory process was extending as the mass was larger than previously. These brawny indurated masses in the broad ligament often reach immense size extending in the retroperitoneal spaces, and at times even reaching to the region of kidneys. They may subside and be completely absorbed, or they may suppurate. When suppuration occurs the abscess usually points in the region of Poupart's ligament. Suppuration and pointing however are late manifestations. Incision and drainage should be postponed until suppuration and pointing have occurred. In the present case aspiration of the mass was done and in spite of the fact that no pus was obtained, an incision was made in the mass. It is felt that it was an error in judgment to have made an incision into the mass, before pus had formed.

Parametritis is a slow and long drawn out process, and requires considerable patience in its management. Premature resort to surgical procedures, however, are never helpful, but instead, the rational employment of sulfonamides, numerous small blood transfusions, and general hygienic measures offer better results. It is of course possible that the present patient may have succumbed regardless of the therapy instituted, but certainly the repeated pelvic manipulations were of no value to her and undoubtedly aided in the spread of the infection. She died from postoperative hemorrhage resulting from incision into a hemorrhagic cellular inflammatory mass before localization and suppuration had occurred.

CURRENT INFORMATION ON SYPHILIS

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THE COMMITTEE ON SYPHILIS CONTROL
MEDICAL SOCIETY OF VIRGINIA

Syphilis and Patients' Resistance or Immunity

The practice of syphilology has developed with a tendency to become a mechanized procedure. Schemes or outlines of treatment have been emphasized. There is now being brought to our attention blitz-tactics with the concentration of forces in a short period. These trends have advantages when appropriately applied in all stages of this infection, particularly in early contagious cases, in the pregnant syphilitic patient, and in certain resistant or progressive late cases. These vigorous measures require careful evaluation of each patient as a basis of preventing untoward reactions from the chemical agents administered. In a group of young, healthy individuals with early syphilis the dangers from careless medical management are minimal, but there will be a higher percentage of cures and a smaller percentage of reactions in all patients, young and old, if each one is studied thoroughly for abnormalities resulting either from the syphilitic infection or some associated condition.

> OSLER: "I often tell my students that it (syphilis) is the only disease which they require to study thoroughly. Know syphilis in all its manifestations and relations, and all other things clinical will be added unto you."

When the Spirochæta pallida invades human

tissue there occur two groups of immune reactions, local and general. The biochemical and immunological processes stimulated are not understood. We do know that resistance to new infection and healing of lesions occur. It has been stated that the cure of syphilis is ninety percent host (human body) reaction against the invader and ten percent chemotherapeutic agents.

It is apparent then that all measures which improve the general health of the syphilitic patient improve his chance of cure. This, in general, should include correction and elimination of all associated abnormalities and deficiencies. In earlier medical history it was stated that a good dentist was necessary in the cure of paresis. This was in the period when the development of stomatitis from the mercury precluded the continuation of its administration. It is more true now that the raising of the standards of general health in the syphilitic is necessary for a cure and the avoidance of harm from the drugs used. Adequate nutrition, particularly a menu with abundant proteins, vitamins and salts, is essential. Regular and adequate rest, habits that promote well being, and complete avoidance of alcohol contribute to a good prognosis in the management of syphilis.

It is definitely known that the arsphenamines cause a flare-up in areas where there are latent pyogenic or virus infections. This fact will explain most of the harmful reactions from treatment agents. Correction of focal infections and secondary anemia are especially beneficial.

The mechanism of action of the specific chemical agents used in the treatment of syphilis are classified as, first, Spirochætical action, and second, resistance building action. Putting the patient in as nearly a perfect state of health as possible assists greatly in obtaining the desired end result in the treatment of syphilis; that is, eradication of infection with minimum damage to the patient.

* * *

Blood tests for syphilis were received by about 25 percent of couples marrying in the United States during the fiscal year 1941. This estimate is made from a tabulation of the results of premarital tests reported from 20 to 26 States having laws requiring serologic examination for syphilis of couples applying for marriage licenses. Out of 853,220 examinations reported, 12,954 were positive for syphilis.

A summary of the findings in 20 recent serologic surveys of syphilis in industry, involving approximately 425,000 workers in 800 miscellaneous industries in about 25 communities, disclosed the following: The positive rates for syphilis ranged from a low of one-half to a high of 10½ percent, with an average of 3 percent. In 1937 a positive rate averaging 5 percent was reported for 150,000 workers tested in 150 miscellaneous industrial establishments.

A campaign to prevent organized use of trailers by prostitutes, particularly in areas near defense industries, was recently launched in Ohio.

MENTAL HYGIENE ACTIVITIES

Hygiene and Wholeness

The ancient Greeks made of some of their highest ideals and of some of their strongest desires goddesses and gods, whom they might worship. Although we have little factual knowledge of Aesculapius, the Greek who is looked upon as the father of medicine, we are encouraged to believe that he had many children and that one of his daughters became famous. She is known as Hygeia, and to the Greeks she exemplified sound personal health and wholesome living. From her name are derived those like words in the English language that relate to individual good health and to those agencies and efforts that maintain health by concern about the personal condition and about the environment. The use of the term hygiene may, therefore, properly have reference to soundness of health in the individual and to all those factors in the individual's environment that may affect the individual's health either favourably or unfavourably.

Although we frequently place the adjective mental before the word hygiene, I doubt if such practice is often justified. In the human being, at least,

we think we find qualities or attributes that are worthy of separate consideration, and we often speak of them under the inclusive term mind and by use of the word mental. But I am not certain that we should limit the possession of mind to mortals, or even to members of the animal kingdom. The other day, in examining an ivy vine, slowly and patiently clambering up a brick wall, I fell to wondering how the vine had found out that on one side of it is a brick wall and on the other three sides only space. But the vine must have been told about the wall, for only on the wall side was it putting out the numberless little hands and feet through which it would fasten itself to the wall. The ivy vine was behaving more adaptably and more intelligently than some other living things that in their egotism limit the possession of mind to us mortals.

For practical purposes it may be permissible to speak of the mind as those attributes by the use of which the living thing acquires information about the environment and by the use of which it attempts to adjust itself to the environment in such fashion as to enable it to continue to live both individually and racially. It is scarcely possible, therefore, to think of mind as separate and apart from the physical body; and it is equally as difficult to contemplate a mindless mortal. Matter and mind are so intermingled in man that one probably should not even attempt to think of the one singly and apart from the other. It may be no more necessary to think of the mind as the product of the physical body than to conceive of the Milky Way as a result of the Universe.

Yet there can be no objection to the study of any of the qualities or attributes of a person if one realizes that one is dealing with the individual only in part and that such fractional effort can never lead to a full understanding of the person. The ancient Greeks would not delimit their contemplation of man either to body or to mind. They thought of man as a totality—a graceful, beautiful, wholesome, competent combination of matter and of qualities that made possible for their small peninsula for a brief period a type of civilization so marvelous that we wonder if the like of it shall ever be known again.

Emerson was an ancient Greek who lived in Massachusetts a hundred years ago. Man is so wonderful that Emerson was constantly enraptured by contemplation of him, when not disgusted by him. Occasionally I am able to understand something that Emerson said. Though he and Walt Whitman must have differed from each other as the stars differ in glory, each thought and spoke of man in terms of grandeur and of majesty. We need, especially in these distracting and tragic days, to turn to each of them for inspiration and especially for stabilization. Emerson said that all nations were unfolded from the first man; that man is explicable by nothing less than all his history; that there is one mind common to all men; and that every man can understand what has at any time befallen any man. And Emerson was obliged, of course, to define history as the record of man's mind.

Not all the best medical textbooks, hygienic or psychiatric, have been formulated by physicians. Not even the most enthusiastic meeting of a mental hygiene society or of a board of health can change the predetermined decrees of Nature. What are those decrees? Those who would presume to proffer advice and counsel about human health and about man's way of living must find out.

J. K. HALL, M. D.

Book Announcements

The Eclipse of a Mind. By ALONZO GRAVES. The Medical Journal Press. New York, N. Y. xii-722 pages. Cloth. Price $5.00.

This admirable volume must by its brilliance assume the proportions of a classic. It is the life history of one Alonzo Graves, an intelligent victim of a manic depressive psychosis. The patient-author was hospitalized on five occasions.

The joint presentation of the complete hospital records and the patient's interpretation of the medical observations is unique. That circumstantiality is to be encountered occasionally in the author does not detract from this work. This volume is not recommended to the light reader; being a study of insanity it is neither a preachment for nor against the care of patients in a mental hospital. To psychiatrists, psychologists and to all with a deep interest in the Manic Depressive Reaction, this book should be of scientific value.

LOUIS KOLIPINSKI, M.D.

The Council
Medical Society of Virginia

A special meeting of the Council was held in Richmond on Tuesday, May 19th, upon request of Dr. Hugh H. Trout, chairman of the Procurement and Assignment Service for Medical Officers in Virginia. The doctors convened in the dining room of the Richmond Academy of Medicine for lunch, with Dr. Roshier W. Miller, president, presiding. Others present were: Dr. J. M. Emmett, president-elect; Dr. Trout; Drs. J. L. Rawls, J. M. Hutcheson, J. L. Hamner, W. C. Akers, W. L. Powell, A. F. Robertson, Jr., H. B. Mulholland, and C. B. Bowyer, councilors from the second through the ninth districts; Dr. Wyndham B. Blanton, editor; Drs. F. C. Pratt, Herbert C. Jones and Julian M. Robinson, as assistants to the councilors; Lt. Col. E. T. Trice, M. C., State Medical Officer for Selective Service; Lt. Com. J. F. Miller, M. C., of the Navy Procurement Service; Major Geo. D. Adamson, Capt. J. M. Dixon, M. C., and Sgt. Jos. Mitchell, of the Medical Officers' Recruiting Board in Roanoke; Dr. Dean B. Cole, chairman of the Legislative Committee of the Society; and the secretary and her assistant.

Dr. Miller stated that he had asked Dr. Cole to attend the luncheon that he might tell the councilors something of the work which he and his committee had accomplished this year. Dr. Cole gave a synopsis of the work since the last meeting of the Society and stressed the need for cooperation. He spoke especially of the splendid assistance which had been given by Mr. L. Preston Collins of Marion in the General Assembly and thought it might be well for this body to express its appreciation of his efforts in behalf of the medical profession, whereupon motion was made and adopted that the President be requested to write Mr. Collins such a letter in the name of the Society.

It was the consensus of opinion that the component societies should be advised as to what had been accomplished by the committee and as to how they as a group and as individuals might assist. Dr. Cole outlined the future work of the Legislative Committee and motion was made that the committee's plans be approved and that the special fund set up for legislative work be used by Dr. Cole's committee as they see fit. This was seconded and adopted.

Maps of Virginia, colored as to congressional districts, has been given each councilor, and Dr. Miller, president, explained that this had been done as a follow-up to letters sent them recently with regard to an amendment to the By-Laws adopted at the last meeting of the Society, calling for ten councilor rather than the nine congressional districts. The councilors generally felt that there would be great confusion if the Society districts do not coincide with the congressional districts, and Dr. Robertson presented the following substitute for Article VIII, Section 7, of the By-Laws: The State shall be divided into councilor districts of the same number as the State congressional districts and these districts shall include the same counties. This was seconded and adopted. The secretary was instructed to advise Dr. Moncure, chairman of the Judicial Committee, of this action that he might offer necessary amendments in the By-Laws at the next meeting of the House of Delegates.

The meeting was then turned over to Dr. Trout who explained the set-up of the Procurement and Assignment Service for Medical Officers and introduced Major Adamson, Captain Dixon, and Sergeant Mitchell, who had been assigned to the Medical Officers' Recruiting Board in this State, and also Lt. Com. Miller who represented the Navy. Dr. Trout said that the Army quota for Virginia is 200 medical men by July 1st and 600 by January 1st, next. Dr. Riggin had found that there are 2,952 doctors in the State, including internes, doctors engaged in industrial work, those of advanced age, and those in active work. The plan suggested was for the councilors and their assistants to secure from clerks of the county courts lists of all doctors in the counties of their respective sections, contact these men and urge them to register with the board at a central location on a designated day. Two to three days would be allotted to each congressional district and Dr. Trout and the councilor or his representative would be on hand to consult with individual doctors when desired. The registration would be for the purpose of surveying the State's medical resources and attempting to secure its quota of doctors, without unduly disrupting medical services for civilians. Dr. Trout stated that it would be especially desirable for physicians under 45 who might wish to enter the services with a commission to volunteer as they would otherwise be subject to draft, unless barred by some physical handicap or for other good reason.

The Councilors decided to call upon representatives of their districts to help in the registrations in sections inaccessible to them, and motion was offered and adopted that the president write such doctors personally, asking them to assist their respective councilors. It was then agreed that the board should start on its tour on the following Monday, accompanied by a representative of the Navy Procurement Service, and schedules were at once arranged to this end.

There being no further business, the meeting adjourned.

AGNES V. EDWARDS,
Secretary.

Approved:
ROSHIER W. MILLER,
President.
June 5, 1942.

Military Medicine

Virginia Doctors in the Services

As far as possible we list the names of all Virginia doctors in any of the Services. We realize, however, that some names have not yet been reported to the Society's office and will appreciate being advised of name and address of any doctor not included. Names are arranged alphabetically, with home address. We have not indicated rank or service as information has not been complete in regard to some.

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Public Health Statistics

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia.

The report of the Bureau of Communicable Diseases of the State Department of Health for May 1942, compared with the same month in 1941, and for the period of January through May 1942 compared with the same period in 1941 follows:

	May 1942	May 1941	Jan.-May 1942	Jan.-May 1941
Typhoid and Paratyphoid Fever	16	16	61	58
Diarrhea and Dysentery	141	49	504	275
Measles	958	6,552	4,289	29,745
Scarlet Fever	66	103	660	835
Diphtheria	21	34	200	184
Poliomyelitis	3	1	6	10
Meningitis	25	12	94	57
Undulant Fever	1	3	9	6
Rocky Mountain Spotted Fever	2	4	3	8
Tularaemia	3	4	22	19

PRELIMINARY REPORT ON INDUSTRIAL X-RAYING SERVICE OF THE STATE DEPARTMENT OF HEALTH

The Virginia State Department of Health through its Bureau of Industrial Hygiene and its Tuberculosis Out-Patient Service, since July 1941, has been operating a portable 35 mm. photo-fluorographic chest x-ray unit for use primarily in industry throughout the State. Since this unit has been in operation, approximately 45,000 chest x-rays have been taken in 61 industrial plants. Preliminary tabulations have been made on approximately 30,000 of these x-rays. The results show that 0.97 per cent of those x-rayed had active tuberculosis, 0.91 per cent of which was secondary and 0.06 per cent primary; 0.52 per cent of the total number of workers had secondary tuberculosis which has healed and 1.65 per cent primary healed; and 0.44 per cent of the total number was classified as suspicious for tuberculosis. In addition, the results show 0.25 per cent having other chest conditions which include such pathology as bronchitis, mycotic infections, emphysema, pleurisy, lung tumor, enlarged heart, bony abnormality, foreign body, and enlarged aorta. The total of all pathology was 6.1 per cent of the entire group of approximately 30,000.

The photo-fluorographic unit is maintained primarily as a screen for determining whether or not pathology exists, eliminating from further consideration persons whose chest pictures present no pathology and referring to the industrial physician, the private physician or the local health officer for further consideration those cases which do show pathology.

It is worthy of note that all of the cases of active tuberculosis which have been uncovered through this service have been, or are in the process of being, referred for proper treatment either in one of the sanatoria or at home where home conditions will allow.

This service has been received enthusiastically by industry in general. It is expected that approximately 50,000 workers will be x-rayed each year for the next five years and that by the time this fairly complete coverage of the industrial population has been made, there will be re-x-rays at many of the plants to determine the progress in conditions and treatment.

At the present time the servic is offered primarily to industries working on war contracts in an effort to keep the war workers as healthy as possible so that stepped-up production can be maintained. The service is part of the industrial health program which views industrial hygiene as adult public health in industry.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, $2.00. Single Copies 25c.

VOL. 69. JULY, 1942. No. 7

Editorials

What Does It Mean?

THE Court of Appeals of the District of Columbia has recently refused to set aside the earlier indictment of the American Medical Association and the Medical Society of the District of Columbia. Their decision raises some interesting questions. What effect will their decision have on the country at large? Will the Supreme Court consent to review the case, and if so, what will its decision be? The wording of the Appellate Court's decision is also interesting, especially its comparison of the legal and medical professions. We are grateful to Mr. Ralph T. Catterall who discusses the decision in a clear and sympathetic manner in the Guest Editorial of this issue of the MONTHLY.

It seems to us a pity that the issue was ever raised. Certainly the District of Columbia was not the place in which to stage a defence of traditional medicine. In the controversy both sides have made mistakes. The purpose of the plan, which was set up in opposition to the wishes of the physicians of the District, might easily have been accomplished if some tactful person, or persons, had persuaded the physicians themselves to set up and supervise this or a somewhat modified plan. It seems also possible that the two medical societies involved, sensing the trends, might have taken the initiative and set up a plan under their own direction rather than be forced to fight one set up by laymen.

Bacterial Warfare

DURING World War I there was talk of the methodical and diabolical spread of disease germs as an instrument of warfare by the enemy. During the years that have passed since that time such discussions are to be found chiefly in the fiction which has war as its background. Recently, if we are to believe the charge brought by Dr. P. Z. King, Director of the Chinese National Health Administration, the Japanese

are actually engaged in bacteriological warfare against the Chinese. Dr. King cites chapter and verse in a plea for drugs of the sulfonamide group and for rat poison with which to combat epidemics now in process.

We are told that five well authenticated examples of attempt to spread disease among civilians in China are now on record. The tale of horror begins in Ningpo where on a certain day in October 1940 a low-flying Japanese plane spread wheat grains over the city. A few days later an epidemic of bubonic plague broke out claiming ninety-nine victims. About the same time another plane spread wheat and rice grains mixed with fleas over Chuhsien and again bubonic plague was the sequel. A few days later three planes appeared over Kinhwa, dropping many large granules which on microscopic examination showed numerous gram-negative bacilli, morphologically identical with P. pestis. Some months later another plane scattered over Changteh rice and wheat grains and other particles upon which organisms resembling P. pestis were also identified. A week later, cases of plague began to appear. An examination of 200 rats caught in Changteh at the beginning of the epidemic showed no signs of plague, but a month later many rats exhibited definite indications of infection. The final example cited is that of an epidemic of serious proportions occurring in three Chinese provinces after "a large number of sick rodents had been set free by the enemy in the epidemic area."

"The enumeration of facts thus far collected" writes Dr. King, "leads to the conclusion that the Japanese army has attempted bacterial warfare in China. Fortunately, the mode of infection and the method of control of plague are known. Our difficulty at present is the shortage of the anti-epidemic supplies required. New drugs, more or less effective for treatment of plague cases, sulfathiazole and allied sulfonamide compounds, China cannot as yet produce herself."

Where Angels Fear To Tread

THOSE who first familiarized themselves with the power and effectiveness of the sulfonamides were so struck with the toxic effects of these compounds that they issued a warning to the timid medical profession, a warning not to go slowly but to go boldly on with its use, in spite of alarming symptoms which might result, provided the indications for this type of therapy were clear cut and definite. The phrase went the rounds: "When you give the sulfonamides, do not look at the patient, look at the chart", which meant that the patient's falling temperature and blood count and a negative blood culture justified his nausea, vomiting, mental confusion and abject appearance.

The experts are now singing another tune. This time they are warning against the widespread and indiscriminate use of the sulfonamides because of an increasing record of disaster. There are doctors who, without blood count, or hospitalization, or follow-up, hand out these powerful drugs with the abandon and complacency with which their forefathers gave calomel and quinine. They seem to believe that every case of pyrexia is a candidate for sulmonamide therapy. The notes of warning against such practice that have been sounded at the last meeting of the American Medical Association, in a recent issue of the Journal of the American Medical Association, and at the Pacific Coast meeting of the Association for the Advancement of Science, are timely and should be emphasized wherever physicians gather to discuss these drugs. Nothing is to be achieved by an attempt to save a patient from a disease only to have him succumb to the therapy employed.

Department of Clinical and Medical Education of the Medical Society of Virginia

Local Programs

At the request of Dr. M. C. Oldham, President of the Northern Neck Medical Association Dr. Fred J. Wampler attended the meeting of that society on May 28 to discuss the program of meetings on Industrial Health being sponsored by the Committee on Industrial Health and this Department. As a result of this discussion arrangements were made for the Northern Neck Medical Association to meet in Richmond at an early date for a symposium on Industrial Health.

Arrangements were made for Dr. W. L. Weaver, Medical Supervisor of the DuPont Ampthill Plant to speak on "The Medical Care of the Industrial Worker" on the program of the Fourth District and Southside Virginia Medical Society at its meeting in Petersburg on June 16. On the same program Dr. Everett R. Evans, Federal Government Research Worker, discussed "Shock".

The Rockingham County Medical Society has requested that speakers be provided for its program on August 10 to discuss various aspects of fractures.

At the request of the Tazewell County Medical Society Dr. J. M. Carlisle, Medical Director of Merck and Company, will speak on "The Physician's Place in Industry" at the July 9 meeting of the society, to be held in Tazewell.

Recent Pamphlets

Discussions of Industrial Accidents and Diseases—U. S. Department of Labor, Bulletin No. 53. Government Printing Office, Washington, 1942—20c.

This bulletin is a report of the Convention of the International Association of Industrial Accident Boards and Commissions held at Winnipeg, Manitoba, in September 1941. While dealing largely with the legal and administrative aspects of Industrial Health, this bulletin also cites numerous case histories involving Precipitation of Latent Disabilities through Trauma. This subject is treated at length by Dr. John Bart Lauricella, Medical Director of the New York State Insurance Fund, who has drawn upon his experience in his own state, and by other doctors who have had varied experience with industrial accidents in the United States and Canada.

Child Health and the Selective Service Physical Standards—U. S. P. H. Service. Reprint. Government Printing Office, Washington. 1942—5c.

The authors of this article have tried to ascertain how early and in what manner disqualifying conditions in military selectees may be detected with a view to preventing them. The physical records of numerous selectees who have been accepted and others rejected are compared with their records made 15 years ago. It was found that defective dentition was the most frequent cause of rejection. Eye defects, cardiovascular diseases, ear defects, defective lungs, and venereal diseases follow in order of frequency among the group examined. It appears that with respect to dental and visual defects these were already stigmatized 15 years before rejection. The same appears true of cardiovascular diseases and ear defects, but the data are not sufficient to warrant definitive conclusions. The bulletin concludes that "It is particularly disturbing to find that, in spite of knowing, for instance, which children in a community would grow up into physically handicapped adulthood, the health professions, the lay professions, and especially society as a whole, has to date apparently failed to take full advantage of the knowledge."

Analysis of Reports of Physical Examination—Selective Service System, Bulletin No. 1. Washington, November 10, 1941.

This is a summary of data on 19,923 reports of physical examinations made by the Selective Service System, showing the distribution of causes of disqualification of 900,000 rejections for military service. The cases are classified by occupations and cause of rejection.

Any of the above reports may be borrowed from the Executive Secretary.

GEORGE B. ZEHMER,
Executive Secretary.

Societies

The Fourth District and Southside Virginia Medical Society

Held its annual meeting in conjunction with the Department of Clinical and Medical Education of the Medical Society of Virginia at the Federal Reformatory, Petersburg, on the afternoon of June 16th as guests of the Medical Department of that institution.

The program included the following papers:

"The Effect of Certain Drugs on Body Tissues with Special Reference to the Organ of Hearing"—Pete N. Pastore, M. D., Richmond

"Actinomycosis"—Hilmar Schmidt, M. D., Petersburg

"The Medical Aspects of Chemical Warfare"—J. C. Forbes, M. D., Richmond

"Phonographic Reproduction of Normal and Abnormal Heart Sounds"—Fletcher J. Wright, M. D., Petersburg

"Report of an Interesting Chest Case"—C. I. Pirkle, M. D., Federal Reformatory

Introductory Remarks About the Next Two Papers—Fred Wampler, M. D., Richmond

"The Medical Care of the Industrial Worker"—W. L. Weaver, M. D., DuPont Ampthill Plant, Richmond

"Shock"—Everett I. Evans, M. D., Research worker for the Federal Government

"Treatment of Dementia Praecox"—Morris Binder, M. D., Federal Reformatory

Following the scientific program, the visiting doctors retired to the Dining Hall where they were served an excellent dinner as the guests of the Reformatory. Mr. David M. Heritage, assistant Senior Warden, made the address of welcome, briefly outlining the methods under which the institution was run. Dr. Leta White of Petersburg made the response to the address.

During the business session that followed, officers for the coming year were elected as follows: President—Dr. B. H. Knight, Surry; vice-presidents—Drs. T. S. Jennings, Waverly, and J. M. Hurt, Blackstone; recording secretary—Dr. Leta White, Petersburg; secretary-treasurer—Dr. C. E. Martin, Emporia; Chairman of Steering Committee—Dr. Wright Clarkson, Petersburg.

The secretary was directed to send flowers to Dr. R. L. Raiford of Franklin who is still confined to his bed by illness.

Delegates from the various divisions to represent the Society at the annual convention of the Medical Society of Virginia were chosen, following which a rising vote of thanks was extended the program and the entertaining committees for the excellent entertainment offered through the afternoon and evening.

FRANCIS N. TAYLOR,
Recording Secretary.

The Amelia County Medical Society

Held its annual meeting at Amelia C. H., on June 1st, at which time delegate and alternate were named to represent this county at the State meeting in October, and the following officers were elected: President, Dr. G. A. Arhart, Amelia; vice-president, Dr. H. C. Rucker, Mattoax; and secretary-treasurer, Dr. James L. Hamner (re-elected), Mannboro.

Dickenson-Buchanan County Medical Society.

At the meeting of this Society on May 20th, at Grundy, Dr. E. M. Fusco of the Grundy Hospital presented a film by Dr. Hugh H. Young on Prostatectomy, and also one on Wound Healing. Delegates and alternates to the State Society meeting were elected at this time.

Dr. J. C. Trivett, Page, is president of the Society, and Dr. T. C. Sutherland, Haysi, secretary-treasurer. They meet the third Wednesday in each month.

The Southampton County Medical Association

Held its regular meeting on May 29th at Franklin. The following program was presented: Low Back Pain by Dr. Leroy Smith; Headaches of Ocular Origin by Dr. Morgan B. Raiford; and Paroxysmal Tachycardia by Dr. H. Charles Ballou. All speakers are of Franklin. Following dinner as guests of the Raiford Hospital, Captain T. Addison Morgan, U.S.A., M.C., Fort Story, spoke on Army Medical Service, A Brief Survey.

Dr. Morgan B. Raiford and Dr. W. T. McLemore, Courtland, were re-elected president and secretary-treasurer, respectively, for the coming year.

Norfolk County Medical Society.

At the annual meeting of this Society, on June first, Dr. A. Brownley Hodges succeeded Dr. M. S.

Fitchett as president. Other officers elected are: Dr. N. F. Rodman president-elect, and Dr. R. Bryan Grinnan, Jr., vice-president. Dr. Lockburn B. Scott was re-elected as secretary-treasurer to serve his twenty-third term. Dr. Laura G. Morris was elected to membership.

News

Finals of Virginia's Medical Schools,

MEDICAL COLLEGE OF VIRGINIA

There were 151 graduates in this year's senior classes of the College—64 in medicine, 31 in dentistry, 22 in pharmacy, and 34 in nursing. Commencement exercises started on the evening of May 30th with the Student Body dance at John Marshall Hotel, and on Sunday the baccalaureate sermon was given by Rev. J. Joseph Rives, D. D., at Centenary Methodist Church. The Alumni business meeting was held the following morning, at which time Dr. Charles L. Outland of Richmond was elected president, succeeding Dr. T. Dewey Davis also of this city. This was followed by luncheon, and the final exercises were held that evening with Dr. Harvey E. Jordan, dean of the Department of Medicine, University of Virginia, as guest speaker. Diplomas were then awarded and 27 of the medical graduates received commissions in the Officers' Reserve Corps of the U. S. Army and Navy. The annual reception and dance at the John Marshall Hotel brought festivities to a close.

At the closing exercises, hospital appointments were announced as follows:

MEDICAL COLLEGE OF VIRGINIA HOSPITAL, RICHMOND—Drs. Pauline Nichols Davis, Roanoke; Gerald Fisk Dederick, Jr., Oradell, N. J.; Donald Roscoe Gilbert, Melvin Hill, N. C.; Lofton Howell Harris, Siler City, N. C.; Haywood Northrop Hill, Richmond; Clara Czaczkes Joel, Richmond; Claude Smith Lawson, Jr., Fairmont, W. Va.; Frederick DeWitt Maphis, Jr., Strasburg; John William Massey, Jr., Newport News; Kemp Plummer, Petersburg; Leonard David Policoff, Richmond; and Richard Gresham Stoneburner, Richmond.

STUART CIRCLE HOSPITAL, RICHMOND—Drs. Hiram Wilson Davis, Williamsburg; Hunter Sheppard Jackson, Richmond; and Franklin Lawrence Overton, Jr., Norfolk.

JOHNSTON-WILLIS HOSPITAL, RICHMOND — Drs. George Edward Ewart, Richmond; Augustine Warner Lewis, Jr., Aylett; Harry Charles Robelen, Jr., Richmond; and John Franklin Williams, Fairfax, Calif.

ST. ELIZABETH'S HOSPITAL, RICHMOND—Drs. Victor Page Owen, Phenix; and Herbert Fariss Webb, Emporia.

NORFOLK GENERAL HOSPITAL, NORFOLK—Drs. William Ryland Bailey, Jr., Quinton; Berkeley Hancock Martin, Jr., Richmond; William Watkins Walton, Petersburg; and David Calloway Whitehead, Chatham.

HOSPITAL OF ST. VINCENT DE PAUL, NORFOLK—Drs. James Walter Choate, Jr., Salisbury, N. C.; and Thomas Berkeley Smith, Ashland.

NORFOLK NAVAL HOSPITAL, PORTSMOUTH — Dr. Robert George Dunn, Jr., Richmond.

UNIVERSITY OF VIRGINIA HOSPITAL, CHARLOTTESVILLE—Dr. Horace Emerson Cromer, Jr., Washington, D. C.

LEWIS-GALE HOSPITAL, ROANOKE — Drs. Jacob Samuel Huffman, Timberville; Duvahl Boone Ridgway, Roanoke; and Reuben Franklin Wohlford, Roanoke.

CHESAPEAKE AND OHIO HOSPITAL, HUNTINGTON, W. VA.—Drs. Thomas Blakely Baer, Huntington, W. Va.; Edward Jones Evans, Huntington, W. Va.; and J. S. Robert McFall, Beaver, Pa.

CHARLESTON GENERAL HOSPITAL, CHARLESTON, W. VA.—Drs. Oscar Lee Ramsey, Jr., Gretna; and Catherine Mary Roth, Roanoke.

OHIO VALLEY HOSPITAL, WHEELING, W. VA.—Dr. Ormond Lee Haynes, Marietta, Ohio.

ROPER HOSPITAL, CHARLESTON, S. C.—Dr. Hyman Hertzel Addlestone, Sumter, S. C.

BARONESS ERLANGER HOSPITAL, CHATTANOOGA, TENN.—Dr. Robert James Allen, Elizabethton, Tenn.

JOHN SEALY HOSPITAL, GALVESTON, TEX. — Dr. James Robert Brandon, High Point, N. C.

GORGAS HOSPITAL, CANAL ZONE, PANAMA—Drs. George Kirby Brooks, Jr., Richmond; and Oscar Wilde Ward, Jr., Phoebus.

PRESBYTERIAN HOSPITAL, SAN JUAN, P. R.—Dr. Mariano Cecil Caballero, San Juan, P. R.

CITY HOSPITAL, WINSTON-SALEM, N. C.—Dr. William Foscue Cox, Jacksonville, N. C.

BAPTIST HOSPITAL, WINSTON-SALEM, N. C.—Dr. Rutherford Douglas Neal, Ruffin, N. C.

COOPER HOSPITAL, CAMDEN, N. J.—Dr. Charles Robert DuGan, Philadelphia, Pa.

CUMBERLAND HOSPITAL, BROOKLYN, N. Y.—Dr. Alexander Dworsky, Brooklyn, N. Y.

CONEY ISLAND HOSPITAL, BROOKLYN, N. Y.—Dr. Bernard Gottfried, Brooklyn, N. Y.

METROPOLITAN HOSPITAL, NEW YORK, N. Y.—Dr. Ansel Lipman, Portsmouth.

BETH ISRAEL HOSPITAL, NEW YORK, N. Y.—Dr. Maxwell Jerome Marder, Bayonne, N. J.

HENRY FORD HOSPITAL, DETROIT, MICH. — Dr. Russell Sylvester Fisher, Richmond.

LOUISVILLE CITY HOSPITAL, LOUISVILLE, KY.—Dr. Charles Gabriel Fox, Jr., Shawver's Mill.

STATE OF WISCONSIN GENERAL HOSPITAL, MADISON, WIS. — Drs. David Hoge Gatherum, Athens, W. Va.; and James Albert Thompson, Jr., Marion.

WALTER REED HOSPITAL, WASHINGTON, D. C.—Dr. William Franklin Grigg, Jr., Richmond.

GALLINGER MUNICIPAL HOSPITAL, WASHINGTON, D. C.—Dr. Maurice Sidney Vitsky, Richmond.

ST. LUKE'S HOSPITAL, BETHLEHEM, PA. — Drs. George William and Josephine Trevvett Melchoir, Richmond.

CHARITY HOSPITAL, NEW ORLEANS, LA. — Dr. George David Pleasants, Greensboro, N. C.

WILKES-BARRE GENERAL HOSPITAL, WILKES-BARRE, PA.—Dr. Evelyn Louise Stull, Covington.

GRADY HOSPITAL, ATLANTA, GA.—Dr. Henry Wise Wood, Jr., Shawsville.

LOS ANGELES COUNTY HOSPITAL, LOS ANGELES, CALIF. — Dr. Frederick Ray Woodward, Los Angeles, Calif.

Dr. Anabel Shawkey McConnell, Gate City, was also granted her degree in medicine at this time but returned home to take over the practice of her husband who has been called into Service.

UNIVERSITY OF VIRGINIA

The final celebration for the University's class of 1942 opened on June 12th, with alumni reunion activities, and informal reunions and group dinners occupied most of the day with the 104th annual meeting on Saturday morning. Uniforms of all branches of the Nation's armed forces were conspicuous. Dr. A. W. Beavan, president of the Colgate-Rochester Theological Seminary, gave the commencement sermon on Sunday. The festivities included dances with music by Ray McKinley and his orchestra, and a barbecue on Saturday afternoon. On the afternoon of June 15th, diplomas were awarded about 475 graduates, following which Governor Colgate Darden, himself a student at the University at time of World War I, addressed the student body.

There were 62 graduates from the Department of Medicine, whose names with hospital appointments follow:

UNIVERSITY OF VIRGINIA HOSPITAL, CHARLOTTESVILLE—Drs. Andrew Jackson Crutchfield, Jr., Mayo; Richard Laurens DeSaussure, Jr., Washington, D. C.; Martin Donelson, Jr., Danville; Harry Edwin Farver, McLean; Glenn Taylor Foust, Jr., Norton; William Elgin Harman, Floyd; Donnie Hue Jones, Jr., Micro, N. C.; Donald Waynes Linck, Charlottesville; Preston Brooks Lowrance, Chattanooga, Tenn.; and William Hamilton Shafer, Winchester.

HOSPITAL OF THE PROTESTANT EPISCOPAL CHURCH, PHILADELPHIA — Drs. Samuel Thompson Adams, The Plains; James Marion Bryant, Bramwell, W. Va.; John Alden Vann, Norfolk, and John Wendell Oast, III, Norfolk.

UNION MEMORIAL HOSPITAL, BALTIMORE—Dr. Alfred Rives Berkeley, Jr., Roanoke.

ST. LUKE'S HOSPITAL, BETHLEHEM, PA.—Dr. Louis Percival Britt, Jr., Richmond.

VIRGINIA MASON HOSPITAL, SEATTLE, WASH.—Drs. Lloyd Byron Burk, Jr., Alexandria, and Charles Adley Mangham, San Antonio, Texas.

U. S. NAVAL HOSPITAL (Stations unknown)— Drs. William Edward Byrd, Norfolk; Edmund McKeil Henderson, Bridgetown; Francis Charles Hoare, Boston, Mass.; William Wyatt Hoback, Roanoke; John Kellam Lingo, Pungoteague; Edward Pincus McCreery, Jr., Hinton, W. Va.; and William Nathaniel Thomas, Jr., Annapolis, Md.

WALTER REED HOSPITAL, WASHINGTON, D. C.—Drs. Eugene Mead Caffey, Jr., Trinidad, W. I., and Richard Coffman Shrum, Dayton.

UNIVERSITY HOSPITAL, ANN ARBOR, MICH.—Drs. Edward Malcolm Campbell, Abingdon, and John Moir Hall, Elkin, N. C.

ROPER HOSPITAL, CHARLESTON, S. C.—Drs. Jesse Newton Clore, Jr., Madison; Joseph Wentworth Coxe, III, Roanoke; William Ashby Davis, Agricola; Henry Price Deyerle, Harrisonburg; Clifford Devere Miller, Charlottesville; and James Arthur Thweatt, Petersburg.

PENNSYLVANIA HOSPITAL, PHILADELPHIA—Dr. William Grant Crook, Jackson, Tenn.

BELLEVUE HOSPITAL, NEW YORK CITY—Dr. Monroe Thomas Diamond, New York City.

ALBANY HOSPITAL, ALBANY, N. Y.—Dr. Herbert Grasty Dickie, Jr., Roseland.

WHEELING HOSPITAL, WHEELING, W. VA.—Dr. James William Dickie, Roseland.

SINAI HOSPITAL OF BALTIMORE, BALTIMORE, MD. —Dr. Eugene Oscar Goldstein, Hampton.

STRONG MEMORIAL HOSPITAL, ROCHESTER, N. Y. —Dr. John Chrisman Hawk, Jr., Shanghai, China.

CINCINNATI GENERAL HOSPITAL, CINCINNATI, O. —Drs. Chapin Hawley, Cincinnati, and Edwin Pearson Parker, III, Ft. Bragg, N. C.

GALLINGER MUNICIPAL HOSPITAL, WASHINGTON, D. C.—Dr. Julius Herman Hopkins, Petersburg.

HOSPITAL DIVISION, MEDICAL COLLEGE OF VIRGINIA, RICHMOND—Dr. Jethro Hurt Irby, Jr., Blackstone.

CHARITY HOSPITAL, NEW ORLEANS, LA.—Drs. Betty Allen Magruder, Charlottesville, and Frederick Dashiell White, Norfolk.

CENTRAL MAINE GENERAL HOSPITAL, LEWISTON, MAINE—Dr. David Vye Mann, Randolph, Mass.

GRADUATE HOSPITAL OF UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA—Dr. Drake Pritchett, Danville.

BARONESS ERLANGER HOSPITAL, CHATTANOOGA, TENN.—Dr. Constantine Nicholas Psimas, Portsmouth.

EMPLOYEES' HOSPITAL OF TENNESSEE COAL, IRON & RAILROAD COMPANY, FAIRFIELD, ALA.—Dr. Walker Reynolds, Jr., Anniston, Ala.

ST. LUKE'S HOSPITAL, NEW YORK CITY—Dr. Richard Larcombe Schley, Savannah, Ga.

GRADY MEMORIAL HOSPITAL, ATLANTA, GA.—Dr. Robert Richard Stanley, Charlottesville.

BRYN MAWR HOSPITAL, BRYN MAWR, PA.—Dr. Weir Mitchell Tucker, Richmond.

EMORY UNIVERSITY HOSPITAL, EMORY UNIVERSITY, GA.—Drs. Herbert Edward Valentine, Lawrenceville and Mervin Bowman Wine, Harrisonburg.

TOLEDO HOSPITAL, TOLEDO, O.—Dr. Joseph Leyburn Wilkerson, Durham, N. C.

WESTERN PENNSYLVANIA HOSPITAL, PITTSBURGH, PA.—Dr. Leonard Jerome Yamshon, Haysi.

NEW YORK POST-GRADUATE HOSPITAL, NEW YORK CITY—Dr. Charles Augustus Young, Jr., Norfolk.

LAKESIDE HOSPITAL, CLEVELAND, O.—Dr. Isaac Myers Zigler, Broadway.

ASSISTANT PHYSICIAN, STUDENT HEALTH DEPARTMENT, UNIVERSITY OF VIRGINIA, CHARLOTTESVILLE—Dr. Albert Slocomb MacMillan, Black Mountain, N. C.

Dr. Edgar Lee Crumpacker, Roanoke, was also graduated at this time.

American Medical Association.

In spite of conditions incident to war, there was a registered attendance of 8,103 at the A.M.A. meeting in Atlantic City, early in June. The meeting was under the presidency of Dr. Frank H. Lahey of Boston, Dr. Fred Rankin of Lexington, Ky., being inducted into office for the coming year. In the election of officers, Dr. James E. Paullin of Atlanta, Ga., was named president-elect; Dr. William J. Carrington of Atlantic City vice-president; and Dr. Olin West and Dr. Herman L .Kretschmer, both of Chicago, were relected secretary and treasurer, respectively. Places for the next three annual meetings are: San Francisco for 1943, St. Louis for 1944 and New York for 1945.

Virginia was largely represented at this meeting, 147 having registered from this State, as follows:

Dr. W. Clyde Adkerson, Lynchburg
Dr. C. R. Ahroon, Jr., Quantico
Dr. Guy C. Amory, Hilton Village
Dr. Mallory Andrews, Norfolk
Dr. Saml. A. Anderson, Jr., Richmond
Dr. V. W. Archer, Charlottesville
Dr. E. M. Babb, Ivor
Dr. Harry W. Bachman, Bristol
Dr. Harloe Bailey, Rural Retreat
Dr. Elisha Barksdale, Lynchburg
Dr. Wm. B. Barton, Stonega
Dr. Henry L. Bastien, Arlington
Dr. William Bickers, Richmond
Dr. Staige Blackford, Charlottesville
Dr. H. G. Bland, Newport News

Dr. Philip Blank, Fort Eustis
Dr. E. D. Blechman, Newport News
Dr. Ben L. Boynton, Norfolk
Dr. Arthur S. Brinkley, Richmond
Dr. M. F. Brock, Norfolk
Dr. Paul D. Camp, Richmond
Dr. Noland M. Canter, Harrisonburg
Dr. Hyman Cantor, Petersburg
Dr. Chas. M. Caravati, Richmond
Dr. B. L. Carleton, Newport News
Dr. J. F. Chairsell, Jr., Christiansburg
Dr. Morris Chase, Camp Lee
Dr. Edgar M. Childrey, Richmond
Dr. Wright Clarkson, Petersburg
Dr. Dean B. Cole, Richmond
Dr. Elizabeth Cole, Norfolk
Dr. C. C. Coleman, Richmond
Dr. John E. Collier, Richmond
Dr. Robt. H. Courtney, Richmond
Dr. L. Philip Cox, Fredericksburg
Dr. Vance M. Cox, Bristol
Dr. C. E. Critcher, New Church
Dr. Donald S. Daniel, Richmond
Dr. J. Wyatt Davis, Jr., Lynchburg
Dr. R. A. Davis, Newport News
Dr. R. M. DeHart, Radford
Dr. J. W. Devine, Jr., Lynchburg
Dr. J. H. Deyerle, Harrisonburg
Dr. Sterrett E. Dietrich, Fort Eustis
Dr. W. K. Dix, Richmond
Dr. J. Newton Dunn, Blackstone
Dr. J. Fred Edmonds, Accomac
Dr. Clayton E. Eley, Norfolk
Dr. J. M. Emmett, Clifton Forge
Dr. Homer E. Ferguson, Richmond
Dr. Carson L. Fifer, Alexandria
Dr. Chas. A. Finnigan, Falls Church
Dr. E. Latane Flanagan, Richmond
Dr. Robt. V. Funsten, Charlottesville
Dr. Emily Gardner, Richmond
Dr. David S. Garner, Roanoke
Dr. E. T. Gatewood, Richmond
Dr. Walter H. Gerwig, Jr., Ft. Monroe
Dr. J. H. Gilligan, Arlington
Dr. James A. Gooch, Alexandria
Dr. Everett V. Gordon, Ft. Belvoir
Dr. Emanuel Greenspon, Newport News
Dr. H. B. Haag, Richmond
Dr. Snowden C. Hall, Danville
Dr. G. G. Hankins, Newport News
Dr. Edwin A. Harper, Lynchburg
Dr. Chas. C. Haskell, Richmond
Dr. Merrill B. Hayes, Ft. Belvoir
Dr. Manes S. Hecht, Fort Eustis
Dr. Martin B. Hiden, Warrenton
Dr. Wm. H. Higgins, Richmond
Dr. L. F. Hobbs, Alexandria
Dr. Paul Hogg, Newport News
Dr. Rudolph Holmes, Charlottesville
Dr. L. A. Houff, Clifton Forge
Dr. K. W. Howard, Portsmouth
Dr. John S. Howe, Richmond
Dr. T. R. Jones, Richmond
Dr. Benj. M. Kagan, Richmond
Dr. Frank A. Kearney, Hampton
Dr. John F. Keithan, Camp Lee
Dr. L. C. Kelly, Portsmouth
Dr. Linwood D. Keyser, Roanoke
Dr. James P. King, Radford
Dr. H. A. Latane, Alexandria
Dr. M. H. Legum, Norfolk
Dr. David E. Liston, Arlington
Dr. James W. Love, Alexandria
Dr. T. B. McCord, Fairfax
Dr. Cameron F. McRae, Fredericksburg
Dr. Colin MacRae, Alexandria
Dr. F. B. Mandeville, Richmond
Dr. Walter B. Martin, Norfolk
Dr. Wm. E. Masters, Quantico
Dr. Lemuel E. Mayo, Jr., Portsmouth
Dr. Jos. Medoff, Fort Eustis
Dr. S. H. Mirmelstein, Newport News
Dr. E. J. Moseley, Jr., Richmond
Dr. H. B. Mulholland, Charlottesville
Dr. Eugenia E. Murphy, Arlington
Dr. Thos. W. Murrell, Richmond
Dr. Beverly W. Nash, Timberville
Dr. R. B. Newman, Hampton
Dr. Samuel Newman, Danville
Dr. S. E. Oglesby, Lynchburg
Dr. R. L. Payne, Norfolk
Dr. John H. Peacock, Ft. Belvoir
Dr. R. W. Postlethwait, Fort Myer
Dr. J. W. Preston, Roanoke
Dr. Saml. E. Proctor, Camp Pickett
Dr. Bernard S. Pupek, Norfolk
Dr. Julian L. Rawls, Norfolk
Dr. D. E. Remsberg, Roanoke
Dr. I. C. Riggin, Richmond
Dr. E. A. Rittenhouse, Fort Myer
Dr. Alex. F. Robertson, Jr., Staunton
Dr. S. H. Rosenthal, Lynchburg
Dr. P. S. Rossiter, Alexandria
Dr. M. Pierce Rucker, Richmond
Dr. James W. Sayre, Newport News
Dr. John H. Selby, Alexandria
Dr. Ernest L. Shore, Harrisonburg
Dr. Reuben F. Simms, Richmond
Dr. Dudley C. Smith, Charlottesville
Dr. Henry C. Spalding, Richmond
Dr. Carl Stein, Ft. Belvoir
Dr. Harry B. Stone, Roanoke
Dr. James B. Stone, Richmond
Dr. L. E. Stubbs, Newport News
Dr. Oscar Swineford, Jr., Charlottesville
Dr. Frank E. Tappan, Berryville
Dr. E. H. Terrell, Richmond
Dr. D. M. Thomasson, Lynchburg
Dr. A. E. Turman, Richmond
Dr. Wm. H. Turner, Jr., Round Hill
Dr. Henry V. Upholt, Jr., Norfolk
Dr. Warren T. Vaughan, Richmond
Dr. Fred J. Wampler, Richmond
Dr. H. Hudnall Ware, Jr., Richmond
Dr. Matthew J. W. White, Luray
Dr. Pauline Williams, Richmond
Dr. S. H. Williams, Alexandria
Dr. Franklin D. Wilson, Norfolk
Dr. Herbert D. Wolff, Jr., Alexandria
Dr. Fletcher D. Woodward, Charlottesville
Dr. Charles A. Young, Portsmouth
Dr. William A. Young, Richmond

Married.

Dr. Herbert Carl Lee, Richmond, and Miss Dovie Johnson Kinlaw, Lumberton, N. C., June 6th. Dr. Lee is a graduate of the University of Wisconsin in 1935. They will make their home in Richmond.

Dr. Robert Coleman Longan, Jr., and Miss Alice Jane VanDenbergh, both of Richmond, June 6th. Dr. Longan is a graduate of the Medical College of Virginia in 1939.

Dr. Douglas Best Stratton, Roanoke, and Miss Myra Aelise McCormick, Lexington, May 16th. Dr. Stratton graduated from the Medical College of Virginia in 1941.

Dr. Carrington Williams, Jr., and Miss Emory Dabney Gill, both of Richmond, June 13th. Dr. Williams received his medical degree from Harvard University this year and will serve his internship at the Boston City Hospital. Mrs. Williams is a daughter of Dr. and Mrs. W. Wallace Gill.

Dr. William F. Grigg, Jr., and Miss Elizabeth Hunter Carper, both of Richmond, June 2nd. Dr.

Grigg was a member of the class of '42 of the Medical College of Virginia.

Dr. Herbert Fariss Webb, Emporia, and Miss Mary Frances Jolly, Millboro, June 3rd. Dr. Webb was a member of the class of '42 of the Medical College of Virginia.

Dr. Augustine Warner Lewis, Jr., Aylett, and Miss Roberta Scott Broaddus, Bowling Green, June 6th. Dr. Lewis graduated from the Medical College of Virginia this year.

Dr. William Foscue Cox, Jacksonville, N. C., and Miss Ruth Gooch Mosby, Newport News, June 2nd. Dr. Cox graduated from the Medical College of Virginia in 1942.

Dr. Leonard David Policoff and Miss Naomi Lewis, both of Richmond, June 25th. Dr. Policoff graduated from the Medical College of Virginia this year.

Dr. Elwood Hess Heilman, during the past year on the resident staff of the Medical College of Virginia Hospitals, and Miss Mary Alice Weeks, assistant dietitian at St. Luke's Hospital, Richmond, June 13.

Dr. Glenn Taylor Foust, Jr., Norton, and Miss Nancy Douglas Tanner, Culpeper, June 12th. Dr. Foust received his medical degree from the University of Virginia this year.

Superintendent at The Lynchburg Colony.

Dr. D. L. Harrell, Jr., formerly clinical director of the Lynchburg State Colony and superintendent of the Petersburg State Colony for the past three years, has been appointed superintendent of the Lynchburg State Colony, succeeding Dr. George B. Arnold, superintendent since February 1934, who left on May the 26th for active service in the Medical Corps of the U. S. Army.

Personnel Notes from the State Health Department.

Dr. E. C. Harper, director of the tuberculosis out-patient service and the crippled children's bureau of the State Health Department, has been named deputy chief in Emergency Medical Service, effective June 1, succeeding Dr. William Grossman who has entered the Service.

Mr. M. Haskins Coleman, executive director of the Richmond Hospital Service Association, Inc., has also been appointed by Dr. Riggin as State hospital officer in the field of emergency medical service.

Dr. Raymond Kimbrough of Norfolk, specialist in dermatology and sypilology, was appointed as of June 1 to the staff of the State Health Department as Venereal Disease Control Officer for the Tidewater Area of the State. Dr. Kimbrough's headquarters will be the Norfolk office of the Southeast Health District.

Dr. William Grossmann, Director, Bureau of Communicable Diseases, State Health Department, Richmond, resigned, effective June 1, to accept a commission in the United States Army.

Dr. B. R. Allen, Health Officer, Isle of Wight-Nansemond-Suffolk Health District, has accepted a commission in the Army and has resigned effective June 15.

Dr. Leo L. Tylec,

Class of '35, Medical College of Virginia, who was practicing in Union City, Conn., before entering the Service a year ago, has recently been promoted to a captain in the Medical Corps of the Army.

Medical College of Virginia News.

A grant of $4,000.00 has been made by the W. K. Kellogg Foundation for loans and scholarships in the school of nursing, making a total of $24,000.00 for loans and scholarships from this foundation for aid to students in the schools of medicine, dentistry, and nursing.

Dr. H. Hudnall Ware, Jr., professor of obstetrics, recently gave a talk at the meeting of the Norfolk Medical Society on *Treatment of Hemorrhage during Pregnancy,* and another at a meeting of the Northern Neck Medical Society on *The Management of Toxemia during Pregnancy.*

Dr. Harvey B. Haag, professor of pharmacology, and Dr. J. H. Weatherby, associate in pharmacology, had an exhibit on Factors Influencing Skin Temperature at the recent meeting of the American Medical Association in Atlantic City. Dr. William M. Bickers, associate in gynecology, also had an exhibit on dysmenorrhea. Dr. C. C. Coleman, professor of neurological surgery, and Dr. Fred J. Wampler, professor of preventive medicine, discussed papers given on the program. A large number of other faculty members attended the meeting.

Dr. Lewis E. Jarrett, director of the hospital division, attended the meeting of the credentials committee of the American College of Hospital Administrators in Chicago recently.

News From University of Virginia, Department of Medicine.

Dr. Fletcher D. Woodward and Dr. Slaughter Fitz-Hugh presented a paper on "The Treatment of Recent Faciomaxillary and Mandibular Fractures" before the Virginia Society of Ophthalmology and Otolaryngology in Staunton on May 16th.

On May 22nd, Dr. Fletcher Woodward presented a paper before the Regional Zone Conference of the American Society for the Hard of Hearing at Lynchburg, Virginia, his subject being "Modern Treatment of Deafness." He also discussed a paper on "Laryngeal Stenosis" before the Section meeting of the American Medical Association in Atlantic City on June 11th, and presented a paper on "Residual Hearing" at the meeting of the American Otological Society at Atlantic City on May 28th.

At the meeting of the American Broncho-Esophagological Association in Atlantic City on June 9th, Dr. W. W. Waddell and Dr. Fletcher D. Woodward presented a paper on "Bronchoscopy in the New-Born".

Dr. Woodward served on the American Board of Otolaryngology, which met in Philadelphia on June 3, 4, 5, and 6th.

The Jefferson Medical College of Philadelphia.

The One Hundred Seventeenth Annual Commencement of this College was held on June 5, the Commencement address being delivered by Alfred P. Haake, A.B., M.A., Ph.D., Economist and Lecturer, on "Today's Challenge for Tomorrow". The graduating class numbered 131, bringing the total number of graduates to 16,945.The graduates represented twenty different states, the Territory of Hawaii and Puerto Rico. Eighty-five members of the class were commissioned as First Lieutenants in the Medical Reserve Corps of the United States Army.

The annual Alumni dinner was held on June 4 with 550 Alumni in attendance: Dr. Warren B. Davis '10, President of the Alumni Association, presided.

The 38th General Hospital Unit of the Jefferson Hospital left for Camp Bowie, Texas, on May 15, 1942. Approximately sixty-two doctors and one hundred nurses composed this unit. Dr. Baldwin L. Keyes, Lt. Col., M.C., U.S.A., is the Unit Director.

The following additions and promotions in the teaching corps have been made, during the past session: Dr. William Harvey Perkins, Dean and Professor of Preventive Medicine: Dr. Hobart A. Reimann appointed Acting Head of the Department of Experimental Medicine: Dr. Baldwin L. Keyes, Professor of Psychiatry: Dr. Harold W. Jones, Professor of Clinical Medicine and Hemotology and appointed to the Thomas Drake Martinez Cardeza Chair of Clinical Medicine and Hematology: Dr. Martin E. Rehfuss, Sutherland M. Prevost Lecturer in Therapeutics in the Department of Medicine: Dr. Clifford B. Lull, Clinical Professor of Obstetrics: Dr. Garfield G. Duncan, Clinical Professor of Medicine: Dr. William J. Harrison, Associate Professor of Opthalmology: Dr. David R. Morgan, Associate Professor of Pathology: Dr. Robert A. Matthews, Associate Professor of Psychiatry: Dr. William H. Schmidt, Associate Professor of Physical Therapy: Dr. Charles Lintgen, Assistant Professor of Gynecology: Dr. Mario A. Castallo, Assistant Professor of Obstetrics: Dr. Arthur First, Assistant Professor of Obstetrics: Dr. Robert A. Groff, Assistant Professor of Neurosurgery: Dr. Reynold S. Griffith, Assistant Professor of Medicine.

Virginia Society of Ophthalmology and Oto-Laryngology.

The regular annual meeting of this Society was held at the Hotel Ingleside, Staunton, on May 16, with the President, Dr. Mortimer H. Williams, of Roanoke, presiding. Guest speakers were Dr. John M. McLean of New York and Dr. Francis E. LeJeune of New Orleans.

At this meeting, the Society voted to form an Associate Membership which lasts for a period of five years, at the end of which time, the applicant is to obtain a certificate from one of the National Boards or be dropped from the roll. The Secretary is to inform physicians in Virginia, who are limiting their practice to Eye, Ear, Nose, and Throat,

and invite them into the Society either as regular or associate members. Regular membership requires that the applicant hold a certificate from one of the National Boards of either Ophthalmology or Oto-Laryngology. Any one wishing information regarding membership into the Society should write the Secretary in regard to his application.

At this meeting, Dr. Guy R. Fisher of Staunton succeeded to the presidency for the coming year; Dr. E. T. Gatewood of Richmond was named president-elect; and Dr. Meade Edmunds of Petersburg was re-elected secretary-treasurer. Naming of the next place of meeting was left to the recommendation of the Executive Committee.

Dr. Edwin F. Gouldman,

Formerly of Colonial Beach, after nearly two years special work at the Flower and Fifth Avenue Hospital in New York City, went on June the 15th to Mercy Hospital in Canton, Ohio, where he had accepted the appointment of senior resident in obstetrics and gynecology, for a year.

The West Virginia State Medical Association,

Which was scheduled to meet at White Sulphur Springs in July, has found it necessary to change its place of meeting because of unexpected complications incident to the war, and the Program Committee has selected Huntington, with headquarters at the Prichard Hotel. Dates will remain the same—July 13, 14 and 15.

Dr. R. Finley Gayle, Jr.,

Richmond, has been appointed by Governor Darden to the State Hospital Board to fill the unexpired term of Dr. Frank Pratt, Fredericksburg, who recently resigned. His term of office will be to June, 1945.

Dr. N. Thomas Ennett,

Formerly of Richmond, but for several years connected with the health department of Greenville, N. C., was elected president of the North Carolina Public Health Association at its annual meeting in May.

The Medical Society of the State of North Carolina,

At its recent meeting, named Dr. James W. Vernon of Morganton as president-elect, and Drs. George S. Coleman of Raleigh and Julian A. Moore of Asheville vice-presidents. Dr. Roscoe D. McMillan of Red Springs was re-elected secretary-treasurer, and Dr. Donnell B. Cobb of Goldsboro was installed as president.

Dr. Frank L. Apperly,

Professor of Pathology of the Medical College of Virginia, has been notified of his election recently as a Fellow of the Royal College of Physicians of London.

Dr. Frank S. Johns,

Richmond, has been re-elected President of the Hampden-Sydney College Board of Trustees for the third consecutive year.

The Society of Chest Physicians of Virginia,

Organized last Fall at time of the State Society meeting, held its first regular meeting in Richmond on March the 31st, with forty-two physicians from all sections of the State in attendance. An interesting program was presented and the following officers elected: President, Dr. Frank B. Stafford, Sanatorium; vice-president, Dr. S. E. Hughes, Danville; and secretary-treasurer, Dr. Walter L. Nalls, Richmond. Dr. Nalls has since been called to service in the Army and has been succeeded by Dr. E. C. Harper of the State Health Department, Richmond. The next meeting will be held in Roanoke in October, at time of the annual meeting of the Medical Society of Virginia.

Dr. William Harrison Higgins, III,

Visited his home in Richmond for a short time before going to the North Carolina State Tuberculosis Sanatorium where he will work for the summer months. In the Fall he will begin an internship at Duke Hospital, Durham, N. C.

Dr. E. Trible Gatewood,

Richmond, read a paper entitled "Chondroma of the Larynx" before the American Laryngological Association which met in Atlantic City, May 25-27.

Dr. Hunter H. McGuire,

Winchester, was elected President of the American Ophthalmological Society at its recent meeting held at Hot Springs. He is the first Virginian to hold this office and succeeds Dr. Allen Greenwood of Boston. Dr. McGuire is a past president of the

Medical Society of Virginia and has been the recipient of many other honors from his confreres.

Dr. Warren T. Vaughan,

Richmond, spoke before the Virginia Section of the American Chemical Society on May 29th, at the University of Virginia, his subject being "Occupational and Chemical Aspects of the Allergy Problems."

Medical Society of the District of Columbia.

Dr. A. Magruder MacDonald who was named president-elect in 1941 succeeded to the presidency of this Society on July 1. Others who will serve with him are: President-elect, Dr. Fred R. Sanderson; vice-presidents, Drs. Thomas S. Lee and Alma Jane Speer; secretary, Mr. Theodore Wiprud.

Elected to Membership in American College of Physicians.

At the annual business meeting of the College in April, Drs. Marion S. Fitchett and Randolph Bryan Grinnan of Norfolk were elected to fellowship, and Dr. Maxwell R. Berry of Richmond and Dr. Bernard I. Lidman of Norfolk were elected to associateship.

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Complete set of Tice's Practice of Medicine, kept up to present date. Also, Boehm's electric combination stethoscope and tongue depressor and several other miscellaneous instruments. Price reasonable. Owner deceased. Address "Instruments", care this journal, 1200 East Clay Street, Richmond. (*Adv.*)

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Obituaries

Dr. Roy Knight Flannagan,

For more than thirty years an outstanding figure in public health work in Virginia, died at his home in Richmond on June 18th. He was born in Albemarle County in 1870 and graduated in medicine from the University of Virginia in 1894. After practicing at Crozet and Charlottesville, Dr. Flannagan was in 1910 made director of inspections of the State Board of Health and in 1914 he became assistant State Health Commissioner. During the first World War he served the City of Richmond as chief health officer and in 1932 he was appointed to the newly-created position of medical supervisor of jails in the State. At the time of his death, Dr. Flannagan was medical advisor to the State Department of Public Welfare. He was a member of many professional organizations and joined the Medical Society of Virginia in 1910. His wife and three children survive him. One of his sons is Dr. John E. K. Flannagan.

Dr. Noah M. Robinson,

Vinton, died on March 5th, after a long illness with heart disease. He was born in Carroll County sixty-six years ago and, after attending Washington and Lee University, studied medicine at the Medical College of Virginia, from which he received his degree in 1904. He had been a member of the Medical Society of Virginia since the following year. His wife survives him.

Dr. John Miller Turpin Finney,

Internationally known surgeon of Johns Hopkins Medical School, died May 30th after an illness of several months. He graduated in medicine from Harvard Medical School in 1889, following which he went to Baltimore. Dr. Finney rose to the rank of Brigadier-General in the Medical Corps during the World War, being chief consultant in surgery to the American Expeditionary Forces. He served as first president of the American Congress of Surgery and was also a former president of the American Surgical Association.

Dr. Henry G. Steinmetz,

Flint, Mich., died in May, at the age of forty-six years. He was graduated from the Indiana University School of Medicine in 1927 and came to Virginia in 1940, at which time he became assistant health officer of Arlington County. After a year, he served for several weeks as health officer of the Page-Warren-Shenandoah Health District, before moving to Michigan. He had been a member of the Medical Society of Virginia since locating in Arlington County.

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VOL. 69. August, 1942 No. 8.

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Annual Meeting—Medical Society of Virginia
Roanoke, October 5, 6 and 7, 1942

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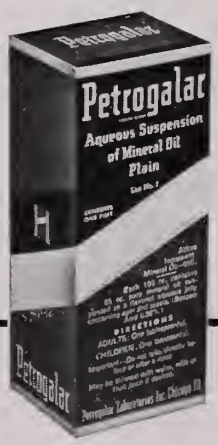

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Guest Editorial

The Significance of History in a Period of Emergency

THE nation-wide survey conducted recently by the *New York Times* revealed that 82 per cent of the institutions of higher learning in the United States do not require the study of American history for the undergraduate degree. Many students go through high school, college, and then to a professional or graduate institution without having ever studied systematically the history of their own country. This is a surprising result and it shows that the value of historical studies is not fully appreciated. There are people who believe that history is a luxury which a country cannot afford, particularly in a period of emergency. *Inter arma silent Musae,* and Clio was one of them.

Such a view is not only wrong but is dangerous. Far from being a luxury, history, that is the views we hold of our past, is one of the most powerful driving forces of life. The men who are now fighting for the United States in foreign lands recall not only their families and home towns but also George Washington, Abraham Lincoln, the traditions of their country and all they stand for.

This will become clearer if I may briefly analyze the procedure of the student of history. The historian is a specialist trained in the methods of historical research. He begins his work by investigating historical records, his sources. He must be able to read, to interpret, and to evaluate them critically. Like the scientist, he often approaches a problem with a working hypothesis but is ready to give it up if his findings lead him into another direction.

On the basis of his analysis of sources, the historian then reconstructs, recreates so to say, a period of the past in writing history. This undoubtedly is an artistic process. The French writer Èmile Zola once defined art as *la nature vue par un tempérament,* nature seen through the medium of a human mind. In the same way we could define history as the past seen through the medium of a human mind, the mind of a man who has submitted to the iron discipline imposed upon him by the methods of historical research. The scientist is often inclined to underestimate the accuracy of the historian's researches because they lack the mathematical element. He forgets that the personal element plays an important part in scientific research also. It is the scientist, an individual human being, who selects his problem. If he engages in experiments, it is he who asks nature questions and interprets the results.

We often hear that history never repeats itself and that it is therefore impossible to learn from history. While historical events are never identical to be sure, yet there can be no doubt that history follows certain patterns. At all times similar causes have produced similar events. How closely history follows established patterns is particularly apparent in warfare where geography is a determining factor. Germany invaded France three times in recent years, following the classical plans of Clausevitz and von Schlieffen. Russia is fighting the invading armies today with very much the same tactics as Kutusov applied so successfully against Napoleon. We can learn a great deal from history, and as a matter of fact some nations have learned a great deal. We are paying a very high price for not having learned more.

If we had studied the history of Germany and Japan carefully, we would not have been surprised by them.

Studies in history and the humanities are like studies in pure science. They have no practical purpose at the moment, but may be needed all of a sudden. A great nation never knows when it will need expert information on conditions of a foreign country, and if the information is to be accurate it must be based on scholarly research. Without historical knowledge we can act instinctively, emotionally, or opportunistically, but never intelligently. Every situation in which we find ourselves is the result of historical developments and trends of which we are usually not aware. But if we are aware of them, if historical analysis can make them conscious, then we undoubtedly can act more intelligently. And this is particularly needed in a period of emergency.

* * *

When we now look at medicine we soon find that in the medical field there is a permanent emergency. The war against disease knows of no armistice. It is being fought relentlessly against an ever aggressive enemy. What we said about general historical studies applies to those in medical history also. Medical history is both history and medicine. It is an historical discipline like the history of art, of literature, or of philosophy, and contributes towards giving us a deeper understanding of the development of human civilization. Our knowledge of the Middle Ages would be very incomplete without a study of the great epidemics that devastated the population at that time. We would have a wrong picture of the Renaissance if we disregarded the revival of learning that took place in science and medicine. And we cannot study the Industrial Revolution without studying at the same time the effect it had upon the health conditions of the people.

Medical history, however, is medicine also. It is part of the theory of medicine and contributes to providing us with a clearer view of the situation in which we find ourselves today. We can cure a syphilitic patient without any historical knowledge, but when it comes to outlining an anti-syphilis campaign we suddenly discover that a great many factors enter the scene which are not scientific but social, economic, religious, or philosophical. They are the results of historical developments and trends, and may well determine success or failure of our efforts.

The more scientific knowledge the physician has, the better prepared he is to combat disease; but knowledge alone is not sufficient. It has to be applied to become effective. And whether society is willing and able to accept the physician's advice depends on a great variety of factors. It seems to me that in this field medical history can make an important contribution and can help in planning for the future. This presupposes, however, that our historical views be correct, the result of serious historical research. True history is always fertile, as Benedetto Croce once said, while untrue history written frivolously is destructive. If we build a sentimental, romantic, legendary history of our past, as professions are sometimes inclined to do, our conclusions cannot be correct. If we wrongly assume that physician and patient, individually and in their relationship, were always the same, we will conclude that there is no reason why anything should be changed now or in the future. Things look different, however, as soon as we know what developments have actually taken place. History teaches us that the position of the sick man and that of the physician in society have changed a great deal in the course of time. The development of science and technology created a new medical science, very different from that of the past, highly effective, highly specialized and technical, and very costly. The same basic force, however, namely, the development of science and technology, resulted in the industrialization of the Western world and changed the structure of society basically. Today the great majority of all gainfully employed persons con-

sists of wage earners and salaried employees, in other words, of people who depend for an income on the labor market and have no social security. It is obvious that the application of this new medical science to a new type of society calls for new forms of medical service. If we want to act intelligently in this field also, we shall not advocate mediaevel forms of medical practice for a modern industrial society.

We must know the facts, be fully aware of the situation that has been created by the developments of the last hundred years. It seems to me that a careful historical analysis can be very fruitful. It will help us not only to understand the past but also to plan for a better future.

HENRY E. SIGERIST*

PREVALENCE OF SYPHILIS IN VIRGINIA AS INDICATED BY AN EVALUATION OF SELECTIVE SERVICE SEROLOGIC TESTS

I. C. RIGGIN, M.D.,
State Health Commissioner
and
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State Health Department,
Richmond, Virginia.

In September, 1940, the Selective Service Act was passed by Congress and signed by the President, thus setting in motion the machinery for one of the largest military training programs ever undertaken by the United States.

A few years ago persons interested in the control of venereal diseases would have been amazed at the thought of a serologic testing program that would screen a great percentage of the nation's male population in the age group 21 to 36. With the passage of this act by Congress, the National Advisory Committee on Control of Syphilis to the U. S. Public Health Service, realizing the public health significance of such an opportunity, urged that a serologic test be given to each registrant. It was realized by the Committee that the age group covered by the draft (21 to 36), included the 20 to 30 group in which one-half of the annual new infections occur. This first plan, to test all registrants, could not be carried out due to the lack of laboratory facilities and time necessary to collect blood specimens for examination.

However, in the interval between the passage of the law and National Registration Day, October 16, 1940, an agreement was effected between the State and Territorial Health Officers Association, U. S. Public Health Service, War Department and Selective Service System whereby each man receiving a physical examination for military duty would be given a standard serologic test for syphilis. From that period to the present, every individual examined under the Selective Service Act has had as a part of his examination at least one standard serologic test for syphilis. Under this national agreement, plans were perfected in each state for the laboratory performance of serologic tests, and the follow-up of all individuals having a positive serologic reaction to determine their status as to infection. It was recognized immediately by public health authorities that this mass blood-testing program not only would be a factor in conserving the nation's manpower through rehabilitation of persons found to be infected, but also would serve as a case-finding procedure, and thus be of real value to the public health, for through these examinations, new cases of syphilis would be brought to light, and through the epidemiological investigation of their familial or sexual contacts additional cases would be discovered. Further, these data provide material from which studies on the prevalence of syphilis are being made for the whole of the United States.

In the State of Virginia, since November, 1940, accurate and detailed records have been kept as to the result of the serologic tests made on selectees.

*Dr. Sigerist is Professor and Director of the Institute of the History of Medicine, Johns Hopkins University, and our foremost medical historian.

In the age group 21 to 36, covered by the original Selective Service Act, the number of men examined is sufficiently large to give excellent figures on the prevalence of syphilis for all counties and the cities of the State. In addition, while the original Selective Service Act limited inductions to the age group 21 to 36, data have been included in this study on volunteers, so that small numbers in the age groups 18 to 21 and 36 and over are included in this report.

The data on which this study is based cover the period November, 1940, through March, 1942, during which time 97,255 Selective Service serologic test reports have been received by the State Department of Health. These reports have been carefully checked for duplication in positive or doubtful reports, whereas in the negative group the procedure was not deemed necessary because the Selective Service regulations require only one serologic test for syphilis on selectees not having a previous history of infection. Of the 95,029 residents within the State who were tested, 87,712 were negative and 7,317, or 7.7 per cent, were positive and consequently considered suspect cases of syphilis on the basis of having had at least one positive or doubtful serologic test. In the non-resident group, the number of persons tested is too small to be significant. However, 2,226 non-residents were examined and 208, or 9.3 per cent, were reported as positive.

To examine in greater detail the distribution of those residents in the State reported as having serologic tests for syphilis, 1,393, or 2.1 per cent, white individuals were positive out of a total of 65,716, and 5,902, or 20.5 per cent, out of 28,834 colored selectees examined were positive.

It is interesting to note that the prevalence figure given for the white population by serologic testing in this study as 2.1 per cent, and for the colored as 20.5 per cent compares favorably with previous prevalence estimates and reports made by the Department.

In June, 1935, in a report of the results of a serologic survey of the Negro population in four counties, namely, Orange, Amherst, Princess Anne, and Albemarle, it was found that in the age group 20 to 30 for colored males, 18.7 per cent were infected, while in the age group 30 to 40, 23.5 per cent were infected.

In a review of the Premarital Examination Act*,

**Virginia Medical Monthly,* Vol. 69, pages 96-100, February, 1942.

TABLE 1
RESULTS OF SELECTIVE SERVICE SEROLOGIC TESTS
November, 1940, through March, 1942
Distribution of State and Out-of-State Residents by Color

RESIDENCE	TOTAL EXAMINED				WHITE				COLORED AND OTHER				COLOR UNKNOWN			
	Total	Negative	Positive	Per Cent Positive	Total	Negative	Positive	Per Cent Positive	Total	Negative	Positive	Per Cent Positive	Total	Negative	Positive	Per Cent Positive
Total Resident in State	95,029	87,712	7,317	7.7	65,716	64,323	1,393	2.1	28,834	22,932	5,902	20.5	479	457	22	4.6
Total Resident Out of State	2,226	2,018	208	9.3	1,738	1,664	74	4.3	467	336	131	28.1	21	18	3	14.3
Total Examined	97,255	89,730	7,525	7.7	67,454	65,987	1,467	2.2	29,301	23,268	6,033	20.6	500	475	25	5.0

TABLE 2
RESULTS OF SELECTIVE SERVICE SEROLOGIC TESTS
November, 1940, through March, 1942
Distribution of Total Resident in State by Color and by Age Group

AGE GROUP	TOTAL EXAMINED				WHITE				COLORED AND OTHER				COLOR UNKNOWN			
	Total	Negative	Positive	Per Cent Positive	Total	Negative	Positive	Per Cent Positive	Total	Negative	Positive	Per Cent Positive	Total	Negative	Positive	Per Cent Positive
18-20	697	657	40	5.7	305	300	5	1.6	389	354	35	9.0	3	3	.....	.....
21-25	51,286	48,510	2,776	5.4	35,596	35,151	445	1.3	15,456	13,129	2,327	15.1	234	230	4	1.7
26-30	26,787	24,395	2,392	8.9	18,535	18,055	480	2.6	8,140	6,231	1,909	23.5	112	109	3	2.7
31-35	13,180	11,487	1,693	12.8	9,219	8,845	374	4.1	3,875	2,564	1,311	33.8	86	78	8	9.3
36 and Over	2,578	2,188	390	15.1	1,764	1,679	85	4.8	791	491	300	37.9	23	18	5	21.7
Age Unknown	501	475	26	5.2	297	293	4	1.3	183	163	20	10.9	21	19	2	9.5
Total	95,029	87,712	7,317	7.7	65,716	64,323	1,393	2.1	28,834	22,932	5,902	20.5	479	457	22	4.6

TABLE 3
RESULTS OF SELECTIVE SERVICE SEROLOGIC TESTS
November, 1940, through March, 1942
Distribution of State Residents by County and City and by Color

RESIDENCE	TOTAL EXAMINED				WHITE				COLORED AND OTHER				COLOR UNKNOWN			
	Total	Negative	Positive	Per Cent Positive	Total	Negative	Positive	Per Cent Positive	Total	Negative	Positive	Per Cent Positive	Total	Negative	Positive	Per Cent Positive
Total Resident in Counties	62,607	59,001	3,606	5.8	45,236	44,369	867	1.9	17,098	14,371	2,727	15.9	273	261	12	4.4
Total Resident in Cities	32,366	28,655	3,711	11.5	20,442	19,916	526	2.6	11,722	8,547	3,175	27.1	202	192	10	5.0
Residence Unknown	56	56	.....	.....	38	38	.....	.....	14	14	.....	.....	4	4	.....	.....
Total Resident in State	95,029	87,712	7,317	7.7	65,716	64,323	1,393	2.1	28,834	22,932	5,902	20.5	479	457	22	4.6

it was reported that in the white male age group 21 to 30, 0.7 per cent were infected with syphilis, while in the age group 31 to 40, 1.3 per cent were infected. In the colored males in the age group 21 to 30, 14.7 per cent were infected, while in the age group 31 to 40, 23.7 per cent were infected.

The difference between figures in the present and the marriage law surveys is negligable and is not significant, due to the fact that in many instances those who know that they have syphilis voluntarily avoid marriage and the accompanying examinations. It can be concluded that syphilis is prevalent in approximately 2 per cent of the State's white males and in 20 per cent of the colored males.

Inasmuch as the number examined in the age group 21 to 25 consists of approximately 50 per cent of the State's population in the age group as given in the 1940 census, this group can be considered as a significant random sample of the male population in this age group. In this age bracket, of the 15,456 colored selectees examined, 2,327, or 15.1 per cent, were found to be positive. Of 35,596 white persons examined in this group, 445, or 1.3 per cent, were found to have positive serologic tests. Of the total in this group, 5.4 per cent had positive serologic tests.

In the bracket 26 to 30, approximately 23 per cent of the resident males, as listed in the 1940 census, were given serologic tests. Of 8,140 in the colored group, 1,909 or 23.5 per cent, were found to be positive, and 480, or 2.6 per cent of the 18,535 white males tested were positive. For the whole group, both white and colored, 8.9 per cent were positive.

In the group 31 to 35, 1,311, or 33.8 per cent, of 3,875 colored selectees examined had positive serology. Of the 9,219 white males examined, 374, or 4.1 per cent, were positive, and of the total number examined, 12.8 per cent were positive. In the 18 to 20 and over 35 groups, the number examined is too small to be significant.

A comparison of the figures for urban and rural areas reveals that in the urban sample 32,366 individuals were tested, 28,655 were negative and 3,711 were found to have doubtful or positive serology. A further breakdown of the rate reveals 2.6 per cent positive in the white group and 27.1 per cent in the colored, while 11.5 per cent of the total urban group were positive. This figure is considerably higher than the percentage given for the national group which is reported as 4.6 per cent in an analysis of the first million selectees made by the U. S. Public Health Service*.

However, considering the fact that the given prevalence figures for the southern states is considerably higher than the estimated and reported prevalence for the nation as a whole, it is to be expected that the State urban prevalence figure should be higher than the national one. In addition, it is an established fact that the prevalence of syphilis is considerably higher in states with large Negro populations, as in the South.

In compiling the rural rate, it was decided to include those naming counties as their permanent address. In this sample there were 62,607 persons tested; of these, 59,001 were negative, and 3,606 were found to have positive or doubtful serology. In the white males in this sample, 1.9 per cent were positive, while 15.9 per cent of the colored were positive. For the total rural males, 5.8 per cent were positive.

The three cities listed in the above table as having the highest prevalence by Selective Service serology are: (1) Suffolk with 1.5 per cent in the white group, 36.8 per cent in the colored group, and an overall of 20 per cent. (2) Petersburg with 1.9 per cent in the white group, 28.7 per cent in the colored group, and 16.3 per cent in the total number examined. (3) Norfolk with 3.7 per cent in the white group, 29.5 per cent in the colored group, and 15.1 per cent in the total number tested. The three cities having the lowest prevalence are: (1) Winchester with 2.0 per cent in the white group, 3.9 per cent in the colored group, and 2.4 per cent in the total. (2) Radford with 2.4 per cent in the white group, 16.3 per cent in the colored group, and 3.9 per cent in the total. (3) Harrisonburg with 3.7 per cent in the white group, 7.1 per cent in the colored group, and 4.2 per cent in the total. The following cities had above 12.5 per cent positive reactions: (1) Hopewell 13.2 per cent; (2) Richmond 12.7 per cent, and (3) Danville 12.7 per cent.

In order to show more clearly the geographical distribution, a map showing the per cent of positive reactions in the counties is included. From the above it will be noted that those counties having the lowest prevalence figures as evidenced by Selec-

*Parran, Thomas; Vonderlehr, R. A.: *Plain Words About Venereal Disease*, New York, Reynal and Hitchcock, 1941, p. 205.

TABLE 4

RESULTS OF SELECTIVE SERVICE SEROLOGIC TESTS

November, 1940, through March, 1942

Distribution of Total Resident in Cities, Listed by Order of Prevalence in Total Examined

CITY	TOTAL				WHITE				COLORED AND OTHER				COLOR UNKNOWN			
	Total	Negative	Positive	Per Cent Positive	Total	Negative	Positive	Per Cent Positive	Total	Negative	Positive	Per Cent Positive	Total	Negative	Positive	Per Cent Positive
Suffolk	690	552	138	20.0	327	322	5	1.5	361	228	133	36.8	2	2	.....	.....
Petersburg	1,627	1,362	265	16.3	746	732	14	1.9	876	625	251	28.7	5	5	.....	.....
Norfolk	5,508	4,679	829	15.1	3,032	2,919	113	3.7	2,424	1,710	714	29.5	52	50	2	3.8
Hopewell	470	408	62	13.2	298	292	6	2.0	171	115	56	32.7	1	1	.....	.....
Danville	1,180	1,030	150	12.7	739	727	12	1.6	441	303	138	31.3	.....	.....	.....	.....
Richmond	7,956	6,945	1,011	12.7	4,916	4,814	102	2.1	3,019	2,113	906	30.0	21	18	3	14.3
Newport News	2,155	1,901	254	11.8	1,087	1,058	29	2.7	1,053	829	224	21.3	15	14	1	6.7
Portsmouth	1,105	980	125	11.3	754	729	25	3.3	344	245	99	28.8	7	6	1	14.3
Roanoke	2,586	2,328	258	10.0	1,782	1,710	72	4.0	788	603	185	23.5	16	15	1	6.3
Hampton	742	669	73	9.8	376	362	14	3.7	354	295	59	16.7	12	12	.....	.....
Lynchburg	1,431	1,310	121	8.5	1,042	1,011	31	3.0	372	282	90	24.2	17	17	.....	.....
Martinsville	632	580	52	8.2	453	444	9	2.0	165	122	43	26.1	14	14	.....	.....
Alexandria	1,683	1,552	131	7.8	1,260	1,238	22	1.7	420	311	109	26.0	3	3	.....	.....
Clifton Forge	157	145	12	7.6	114	111	3	2.6	43	34	9	20.9	.....	.....	.....	.....
Williamsburg	250	232	18	7.2	163	163	.....	.....	86	68	18	20.9	1	1	.....	.....
South Norfolk	368	343	25	6.8	281	280	1	0.4	87	63	24	27.6	.....	.....	.....	.....
Fredericksburg	478	448	30	6.3	365	359	6	1.6	110	87	23	20.9	3	2	1	33.3
Staunton	506	476	30	5.9	399	395	4	1.0	107	81	26	24.3	.....	.....	.....	.....
Bristol	412	388	24	5.8	340	327	13	3.8	59	48	11	18.6	13	13	.....	.....
Buena Vista	164	155	9	5.5	143	138	5	3.5	17	13	4	23.5	4	4	.....	.....
Charlottesville	942	893	49	5.2	692	681	11	1.6	244	206	38	15.6	6	6	.....	.....
Harrisonburg	355	340	15	4.2	298	287	11	3.7	56	52	4	7.1	1	1	.....	.....
Radford	436	419	17	3.9	380	371	9	2.4	49	41	8	16.3	7	7	.....	.....
Winchester	533	520	13	2.4	455	446	9	2.0	76	73	3	3.9	2	1	1	50.0
Total Resident in Cities.	32,366	28,655	3,711	11.5	20,442	19,916	526	2.6	11,722	8,547	3,175	27.1	202	192	10	5.0

FIGURE 1

PREVALENCE OF POSITIVE SEROLOGIC REACTIONS AMONG PERSONS TESTED UNDER THE SELECTIVE SERVICE SYSTEM, BY COUNTY

NOVEMBER 1940 THROUGH MARCH 1942

tive Service serology are, largely, confined to the western border of the State and the Valley of Virginia. In general, the counties having the highest prevalence are those which have a correspondingly high proportion of colored residents.

In this connection certain counties can be grouped by prevalence in geographical location. Northampton has the highest prevalence, 23.7 per cent of all persons tested, with 1.6 per cent of the white and 33.6 per cent of the colored. In Accomac, 17.6 per cent of the total examined gave positive reactions, with 1.7 per cent of the white and 34.3 per cent of the colored. The prevalence in these two counties as evidenced by Selective Service serology confirms previous estimates based upon marriage law reports and other summaries.

Further examination of the prevalence rate with attention directed to those counties known to have a Negro population of 50 per cent or more reveals correspondingly high rates. Greensville, Sussex, and Southampton have an average of 14.5 per cent positive reactions with approximately 20 per cent in the colored group. Goochland, Amelia, and Cumberland figures average approximately 10 per cent positive reactions with an average of 15.5 per cent positive in the colored group. Nansemond, Isle of Wight, New Kent, Essex, King William, and King and Queen show similar prevalence figures though slightly lower than those mentioned.

The other counties bordering the Eastern Shore of Virginia and the areas of concentrated population around Newport News, Portsmouth, and Norfolk comprise the balance of the counties having the high prevalence as indicated by positive Selective Service serologic reports.

Inasmuch as this analysis is based on reports of standard serologic tests and not on definite clinical diagnosis of the disease syphilis, generalized conclusions are dangerous. Nevertheless, it has been an accepted epidemiologic practice to use laboratory tests as a gauge with which to measure the prevalence of certain diseases in a population group.

Therefore, it is felt that, on the basis of the above reports, progress has been made in the five years of the State's venereal disease control program, but there is still need for more intensive control. Additional emphasis should be directed toward the younger age groups and the colored population, both to restore the infected individual to health and to prevent him from suffering from the late crippling manifestations. Advanced cases, as is well known, are a burden on the communities in which they reside. Further, our control efforts should be based on more intensive case-finding using mass screening procedures and contact tracing by public health workers. Private physicians can investigate contacts of infectious cases of syphilis in their immediate practice. This will bring such persons to examination and treatment, and thus check further spread of the disease.

A PSYCHIATRIST LOOKS AT THE PROBLEM OF ALCOHOLISM

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The three greatest public health problems in the United States today are tuberculosis, syphilis and alcoholism. During the last twenty years the first two of these diseases have received the continuous attention of the medical profession, but alcoholism has not yet been completely accepted as a medical problem. It is an endemic condition, however, and there are few families of any size in the United States of which at least one member is not an alcoholic. Alcoholics in the United States can not be counted and mere estimation is difficult. It is known, however, that there are many thousands in every state in the Union. The prevalence of the condition is even more noteworthy when it is recalled that only a small proportion of those who drink to excess are recognized alcoholics and are receiving treatment.

Definition of the term alcoholism is difficult, but it is generally agreed that a person who drinks alcoholic beverages so immoderately that he is unable to maintain his position in a family, occupational, social or community group is to be considered an alcoholic. When the pattern of drinking becomes so important to an individual that he becomes ob-

viously ill, physically or mentally, such behavior becomes a problem in medicine and more particularly in psychiatry. The moral aspects of drinking are no longer emphasized. Because of the physical and mental damage which inevitably results from prolonged or excessive drinking, alcoholism must also be considered as a public health problem and should be handled with the techniques of medical science and preventive medicine.

Acute or chronic alcoholism seems to result in part from the psychological inadequacy of the individual. Thus, after individual tolerance and habituation are duly considered it is found that personal factors appear to determine to a large extent why certain persons can drink a given volume of alcohol in a given period of time and suffer no untoward effects while other persons under the same conditions show abnormal behavior. Variations in personality seem to explain aberrant responses better than any other concept yet formed. These variations appear to be in large measure conditioned by the personal experience of the alcoholic individual and may be moulded by the forces to which he has been exposed as a child and as an adolescent. The difficulties with which he has had to deal immediately before the onset of alcoholism may be more important as recipitating factors than as actual causes. Actually it is believed that the psychological roots of alcoholism reach back to childhood. At the present time generalizations are inconclusive about the causes of acute and chronic alcoholism but it is known that the type of individual who is unwilling or unable to face the realities of his life frequently becomes an alcoholic. The person who in childhood has been over-protected, too strongly dominated, or pampered by over-solicitous parents has a very hard time learning to meet natural responsibilities. Such a person tends to substitute for mature reactions the infantile regressive patterns which in childhood found expression in neurotic behavior such as temper tantrums, bed-wetting and excessive masturbation. Unless the adult accepts the need for mature behavior he may continue to follow his childish patterns. One of the most common forms of neurotic behavior is drinking too much. Alcoholism can be, and often is, the symptom of a neurosis. It can, however, also be a symptom of a psychosis or a border-line condition.

Prolonged drinking usually results in some form of neuropsychiatric disorder. It may be an avitaminosis, such as alcoholic polyneuritis or pellagra caused by faulty dietary habits and the consequent lack of vitamines. (Many of the avitaminoses occurring in alcoholic persons are never diagnosed.) Or there may be a frank alcoholic psychosis such as Korsakow's syndrome. Delirium tremens is very common; between 1915 and 1935, 6 per cent of all the cases of alcoholism admitted to the Boston City Hospital were diagnosed delirium tremens. The chief cause of involuntary hospitalization of alcoholic patients (apart from alcoholism as the primary diagnosis) is severe physical injury, mainly head injuries. Pneumonia and fractures are the commonest medical and surgical complications of alcoholism, generally speaking. The most common physical ailment among chronic alcoholics is some form of gastrointestinal disturbance. Alcoholism is very commonly associated with the occurrence of mental disease; about sixty per cent of all patients admitted to Massachusetts mental hospitals in the last twenty-five years had a history of the intemperate use of alcohol.

It can easily be seen that the cost of hospital care of alcoholics is great, especially since most alcoholic men and women are finally cared for in state or municipal institutions to which they make no payment. Also the relief care of the families and dependents of alcoholics, whose income and earning power have been lost, necessitates large appropriations and expenditures every year on the part of towns, municipalities, cities and states. The maintenance of courts for the penal disposition of "drunkards", socalled, increases this cost, as does also the expense of maintaining alcoholics in state penal institutions such as the Bridgewater State Farm (in Massachusetts) and in the various county houses of correction. Alcoholism is a complicating factor in the history of about half the prisoners in state penal institutions who are not sentenced primarily for alcoholism. Many of these committed their offenses while intoxicated and claim that they would not have done so if they had not been under the influence of alcohol. This claim, of course, must be taken with a grain of salt, but it is interesting in itself. That the prisoner may consider drunkenness a partial excuse for crimes committed while intoxicated is a symptom (or an evidence) of the alcoholic's characteristic ability to rationalize and excuse himself.

There are very few places in any state where al-

coholics are welcomed for treatment unless they can afford the necessarily high costs of private institutions. They are not received graciously at general hospitals, for the most part, and if taken in at all, are usually cared for only during the acute phases of their intoxication. Alcoholic patients have to be sent to certain hospitals secretively, presumably for observation or study. They are not accepted at most state mental institutions unless they are suffering from alcoholic psychoses or equally severe mental illnesses in which alcoholism plays a secondary part. Few private physicians are equipped by training or interest to treat alcoholism and private psychiatrists are naturally reluctant to accept an alcoholic individual as a patient, for the alcoholic is usually not cooperative in treatment and may be actively resistant. There are few small hospitals where an alcoholic can receive special treatment. Outstanding among these is the Washingtonian Hospital, in Boston, which was founded in 1858; but few institutions have funds or facilities to provide treatment for all alcoholic patients who seek admission.

In the treatment of acute (or chronic) alcoholism the physical condition of the patient must have first attention. When the physical status has been improved by rest, sedative and analgesic drugs are administered to relieve nervous tension. Other important points in the treatment of acute alcoholism are the restoration of fluids, dietary readjustment and such specific measures as are necessary to general health. Psychotherapy should also be attempted. The first requisite is the patient's wish to overcome the alcoholic habit and his sincere attempt to cooperate with the therapist. Complete abstinence from alcoholic beverages is an absolute necessity for the alcoholic, though some accept this principle slowly, if at all. Psychotherapy aims at reviewing the past history of the alcoholic and attempts to focus attention on the factors which have built up the drinking habit, in an effort to develop insight in the patient, and new ways of spending his energy. It is possible to help some patients to reorganize their lives with a program which will have little place left in it for drinking. The factors of boredom, social inadequacy and fatigue often play a large part in the temptations of the alcoholic. These conditions can be partially remedied or prevented by thought and planning.

In nearly every state a great need exists for facilities to treat alcoholic patients who are unable to pay for treatment. Treatment should be made available through special clinics. Most general hospitals at present do not have physicians or space (or the interest, as yet) to provide proper treatment for alcoholics. Clinics should be operated also with the aim of preventing secondary complications, neurological and psychiatric. They should be established in connection with the institutions at present administered by the Departments of Mental Health. But these clinics can not be established without a pre-existent or concurrent educational program, in which state, municipal and federal authorities should participate. This program aimed at treating and preventing alcoholism might take a form similar to the one which has proved so effective in directing public attention to syphilis as a public health problem. The clergy, the press, lawyers and business men, led by progressive physicians, could prove very effective in promoting cooperation between alcoholics in need of help and those individuals, organizations and institutions that hope to aid them.

SUMMARY

Alcoholism has become so widespread in the community and has reached such proportions that it must now be considered a major problem in public health. It affects every citizen, whether alcoholic or not, because its cost to the taxpayer is ultimately so great. Basically, alcoholism requires medical and psychiatric care, though the problem might also be approached by legislative measures aiming to control without prohibiting. There is a great need for the establishment of special clinics and hospital facilities for the treatment of alcoholism. The need is especially acute at this time when every national resource must be conserved for purposes of defense. Along with tuberculosis and syphilis, alcoholism must be considered as one of the chief problems confronting the men and women of this country today.

41 Waltham Street.

MANAGEMENT OF CROSSED EYES BASED UPON OBSERVATION OF FORTY-SIX CASES*

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If all cases of strabismus presented the classical textbook signs and symptoms, the subject would be of little interest; however, each presents some variation which makes the diagnosis and treatment a difficult problem. Some of the problems are as follows:

1. Is the patient a medical or surgical case? If it is a medical case, what treatment is indicated?
2. Should we strive for only a cosmetic result or for a cosmetic and physiological result?
3. What do we mean by a physiological result?
4. When is orthoptic training indicated?
5. How soon after operation should orthoptic training be started?
6. Does a concomitant squint appear gradually or suddenly?
7. What is the age limit for surgery?
8. Classification of squint.
9. What is the anesthesia of choice?

Before attempting to answer any of the above-mentioned problems, importance should be given to a definite diagnostic[3] routine examination for each case which is as follows:

1. Refraction under complete cycloplegia.
2. Visual acuity, fusion and diplopia.
3. Measurement of the amount of deviation (a) with and without correction, using the screen and parallax method; (b) with and without cycloplegia; (c) for distance and for near; (d) in the six cardinal directions of gaze.
4. Study of the movements of the eyes by the comitance test. This aids in obtaining information on primary restriction or secondary overaction in the different directions of gaze. It is particularly helpful where you have both vertical and lateral deviation.
5. A study of the near point of convergence.

Fig. 1.—E. B. S.—Age 6. Type of squint: Alternating convergent strabismus. Amount of squint: Esotropia 40 prism diopters for distance and esotropia 78 prism diopters for near. Type of operation: Myomectomy of left inferior oblique with recession of left medial rectus 4 mm. and resection of left lateral rectus 10 mm.

*Read before the Virginia Society of Otolaryngology and Ophthalmology, at Staunton, May 16, 1942.

PREDISPOSING CAUSES[1]

Predisposing causes of strabismus are many, and different authors have their own ideas. Some of the more important ones are as follows:

1. Far-sightedness.
2. Abnormal muscular variation.
3. Anisometropia—difference of the size of retinal images of the two eyes.
4. Defective ability for fusion.
5. Amblyopia or poor vision.
6. Hereditary tendency to squint.

ONSET OF STRABISMUS

It may occur during the first year and the onset is gradual. Usually, however, it is after the first

Fig. 2.—S. H.—Age 7. Type of squint: Convergent strabismus O. S. Amount of squint: Esotropia 50 prism diopters. Type of operation: Recession left medial rectus of 4 mm. and resection left lateral rectus of 7 mm.

eighteen months and becomes very noticeable at four or five years of age as the child then becomes interested in near work which requires accommodative efforts. If the condition is not corrected then, the squint will manifest itself not only for near work but for distant vision as well.

Fig. 3.—B. G.—Age 3. Type of squint: Convergent strabismus O. S. Amount of squint: Esotropia 35 to 40 prism diopters. Type of operation: Jameson recession of right internal rectus and resection of right external rectus.

CLASSIFICATION[2]

1. Pseudoparalytic strabismus.
2. Accommodative strabismus.
3. Strabismus due to or associated with fusion defects.
4. Strabismus due to or associated with amblyopia.
5. Strabismus due to or associated with neuromuscular defects.
6. Strabismus due to or associated with anisometropia.
7. Strabismus due to or associated with multiple defects.

MEDICAL TREATMENT

Our medical treatment is as follows:

1. Atropinization of the eyes.
2. Occlusion of the fixing eye.
3. Correction of the refractive error.
4. Orthoptic fusion exercises.

The ideal objective is not only to have eyes straight with glasses but to be straight without glasses and to have physiological function which consists of first, second and third degree fusion with good amplitude, normal vision in each eye and eyes parallel. Treatment should be begun as soon as the squint is definitely manifested, regardless of the age.

Children often as young as one year can be made to wear glasses. Parents are frequently advised to let the children alone as they will outgrow the squint. This is a mistake. Guibor and others who have done research work in this field have definitely shown partial loss of vision and secondary macular degeneration occurs in most cases before the third year.

Fig. 4.—C. G.—Age 2. Type of squint: Convergent strabismus O. S. Amount of squint: Esotropia 40 prism diopters. Type of operation: Moderate resection and recession O. S.

Fig. 5.—D. A.—Age 20. Type of squint: Convergent strabismus O. S. Amount of squint: Esotropia 70 prism diopters for near and esotropia 50 prism diopters for distance. Type of operation: Recession internal rectus 4 mm. and resection external rectus 3 mm. O. S.

Dunphy, of Boston, advocates the selection of cases for orthoptic training based on the following conditions:

1. Age must be over four years.
2. I. Q. must be good.
3. Attendance must be regular.

4. Vision in poorer eye should be a least 20/40.
5. Retinal correspondence must be normal.
6. Paralytic cases must be eliminated.
7. Marked vertical deviations must be eliminated.
8. Patient must show a good capacity for binocular vision on synoptiscope.

Results obtained by Dr. Dunphy by orthoptic training in fifty cases of internal quint (normal correspondence):

WITHOUT GLASSES	No.	%
Binocular fixation	31	62
Cosmetically straight but not true binocular fixation	11	22
Failures	8	16
Totals	50	100

ANESTHESIA

In children we use ether anethesia. In adults we use preliminary medication and local anesthesia—sometimes retrobulbar injections are used. The type of operation to be done depends upon the type of squint. For correction of the lateral imbalance, we use the Lancaster modification of the resection operation, and for the recession a modification of the Jameson operation. For suture material

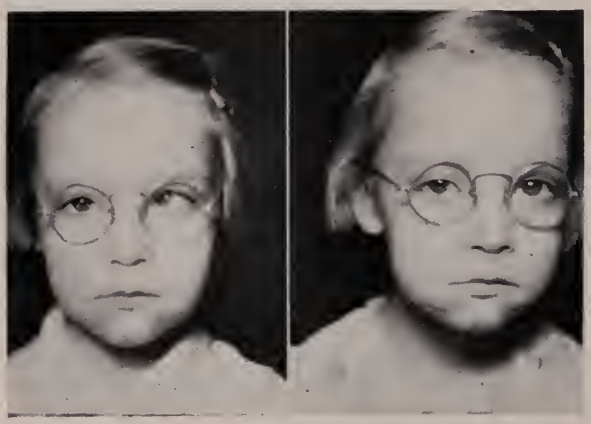

Fig. 6.—G. D.—Age 5. Type of squint: Convergent strabismus O. D. Amount of squint: Esotropia 25 prism diopters; left hypertropia 10 prism diopters. Type of operation: Resection of external rectus and recession of internal rectus O. D. Resection of external rectus O. S.

we employ triple O plain catgut for both resection and recession and for closing the conjunctiva. We bandage the operative eye for one week and change the dressings daily. If glasses have been worn prior to the operation, we usually advise their continuance and also orthoptic training, endeavoring to secure a physiological and cosmetic result. For the correction of the vertical imbalance, each case must be considered on its individual merits.

Fig. 7.—B. C.—Age 19. Type of squint: Alternating convergent strabismus. Amount of squint: Esotropia 40 to 45 prism diopters. Type of operation: Resection left internal rectus 4 mm. and resection left external rectus 8 mm. O. S.

CONCLUSIONS

From our experiences in forty-six cases of crossed eyes since 1938, we feel that active medical treatment should begin as soon as the squint is definitely manifested.

Second, medical treatment, which consists of atropinization of the eyes, occlusion of the fixing eye and correction of the refractive error should be thoroughly carried out before the third year of life.

Third, if medical treatment is not successful in six to twelve months, surgical correction is indicated, regardless of age.

Fourth, if you only wish for a cosmetic result, surgery may be delayed; but, if you want both cosmetic and a physiological result, medical treatment and possibly surgery must be thoroughly carried out before the third year of life.

Fifth, orthoptic training can best be given after the fourth year. Each case must be carefully selected. Retinal correspondence must be normal and paralytic cases eliminated.

Sixth, medical treatment and orthoptic exercises give best results in patients with less than 15 degrees of squint.

Seventh, orthoptic training is a valuable adjunct to the surgical treatment of strabismus, both pre- and postoperatively.

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PRIMARY DYSMENORRHEA*

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The most common cause of disability among young women is the periodic recurrence of disabling symptoms associated with menstruation. These symptoms may be classified under two heads which have a widely separated and distinctly different physiologic basis. The first group of symptoms are those of a general nature such as nervousness, irritability, headache, and backache which are associated with endocrine changes, particularly the high estrogen titres incident to the onset of menstruation. It has been shown by recent investigations that most, if not all, of these symptoms can be explained on the basis of water retention brought about by the fixation of the sodium ion in the tissues. This results from the well known sodium-fixing power of estrogen. Edema of the brain, pelvic organs, and all other structures of the body which result from the fixation of fluids in the tissues may be dramatically relieved by placing the patient on a salt free diet one week before the expected menses and at the same time prescribing ammonium chloride, 7½ grains t.i.d., daily during this week. The beneficial result of such therapy for the more general symptoms associated with menstruation is now well established by the work of Greenhill and others. It coincides with our knowledge relative to the increase in weight so commonly observed during the premenstruum. Unfortunately, the more acute symptoms of menstruation, namely, the severe pain of dysmenorrhea, is not so readily explained and not so readily relieved. Although it has been assumed by most observers that this symptom like the menstrual molimina already described is the result of certain endocrine changes, there is no good scientific evidence to show that primary dysmenorrhea is the result of any hormone deficiency. The extensive work done on the rabbit uterus during the last decade showed conclusively that estrogen stimulated uterine contractions while progesterone inhibited them. It was quite naturally inferred from these observations on rabbits that dysmenorrhea was the result of progesterone deficiency. It may now be said, on the basis of my investigations and also those of Wilson and Kurzrok, that the observations upon the rabbit uterus may not be applied to the human. In fact, the human uterus reacts to certain hormones in a manner directly opposite to that seen in rabbits. That is not too surprising, however, when one recalls the irreconcilable variations of uterine response in different species to various drugs, notably epinephrin. Furthermore, the assay of hormone titres of patients with severe dysmenorrhea are in no way different from those of women menstruating without pain.

*Read at the meeting of the Medical Society of Virginia at Virginia Beach, October 6-8, 1941. Changes have since been made to bring paper up-to-date.

PLAN OF STUDY

In order to throw some light on the pathological physiology of dysmenorrhea and the effects of certain therapy, this study was undertaken. Fifteen patients who suffered severely with each menses were selected for study. Each was seen in the premenstrual phase, several days before the expected menses, at which time a small condom balloon was inserted into the uterine cavity. This was connected by way of a rubber tube to a mechanical ink writer which was so located that its writing point would record the excursions of the writing point on a revolving kymograph equipped with a "timer". The system was filled with water until the intra-uterine balloon was distended to a pressure of approximately 50 mm. of mercury. Variations in the intra-uterine pressure resulting from uterine contractions were transmitted through the balloon to the mechanical recorder which by means of a delicate system of levers transferred the record of uterine contractions to the kymograph. (Fig. 1). Objections to this technic have been raised on the ground that a foreign body in the uterus might alter the pattern of uterine motility. This is probably true, but considerable experience with this technic has shown that the patterns of motility recorded by this technic are always comparable and that is what is desired. It is the object of the experiment to demonstrate the difference between the non-painful menstruating uterus and the dysmenorrheic uterus. The foreign body in the uterus of both permits a fair comparison. After the premenstrual contractions were recorded, the patients were instructed to return at the onset of their most severe dysmenorrhea. Upon their

return the tracings of the uterus were again recorded. After getting the tracing on the dysmenorrheic uterus the patient was given one of several drugs which have been tried clinically in the treatment of this condition and its effect on the contractions recorded. The effects of certain commonly used drugs are

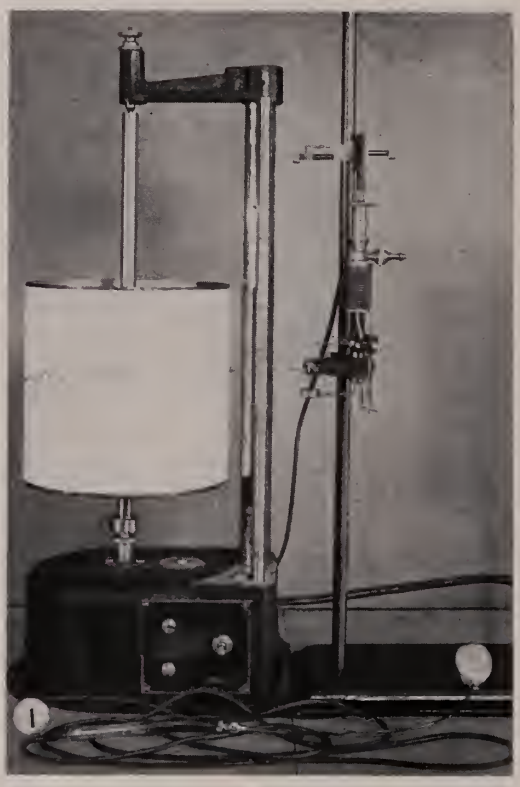

Fig. 1.—A small condom balloon attached to a heavy woven catheter and connected by way of a rubber tube to the mechanical ink recorder. The ink recorder is so arranged that its writing point records the tracings of uterine contractions on the kymograph.

shown graphically. After allowing sufficient time for the effect of the drug to be observed the patient was given ¼ grain of morphine sulfate and the tracing recorded after fifteen minutes. This was done in order to establish a base line for the contractions of each uterus. If the uterus is tetanic, the morphine will abolish this tetany causing the writing point to drop to a lower level. If the uterus relaxes completely between each contraction, then morphine will produce no effect on the base line of the contractions. After studying various drugs, the effects of which are described below, several patients were then selected for the study of the effect of certain hormones on the contractions. The results are graphically shown in the tracings. Patterns of uterine motility in the normal menstrual cycle have been previously studied and reported.[1]

Motility in Non-Painful Menstruation

A number of patients with normal, non-painful menstruation have been studied. The pattern of uterine motility in these cases has been previously reported.[1] During the follicular phase (pre-ovulatory), the contractions are low in amplitude, rapid, and somewhat tetanic (Fig. 2). These contractions are characteristic of unopposed estrogen influence. During the luteal phase (post-ovulatory), the contractions assume a much higher amplitude, lower frequency, and tetany is abolished. This is the progesterone influence. Seven tracings were taken in this group while the patient was menstruating. These non-painful menstrual contractions show a complete absence of tetany. With this type of motility during menstruation, no pain is experienced (Fig. 2). The writing point returns to the base line after each contraction, showing complete relaxation of the uterus. These patterns of uterine motility have now been observed by several investigators. They are consistent and may be accepted as the true picture of uterine contractility in the normal ovulatory cycle.

Motility in Painful Menstruation

In each of the fifteen cases studied a normal ovulatory cycle was found. The presence of a corpus luteum was evidenced by the high amplitude, low frequency contractions seen only when the uterus is under progesterone influence. The presence of a corpus luteum was further demonstrated by finding a secretory endometrium during the pre-menstrual phase in all cases. Tracings taken during the pre-menstrual phase on these patients with dysmenorrhea showed the usual high amplitude, low frequency, atonic type of contraction (Fig. 3). However, the tracings which were taken during menstruation on these cases, usually on the first day and while the patient was experiencing her most severe pain, showed a marked degree of tetany with the usual high amplitude contractions superimposed upon it (Fig. 3). This must be the typical pattern of uterine motility in dysmenorrhea because it was present in thirteen of the fifteen cases studied. Tetany was never seen in the non-painful menstrual contractions. Contractions are similar in both groups, except for the tetany in the latter. In this group not a single contraction ever returned to the base

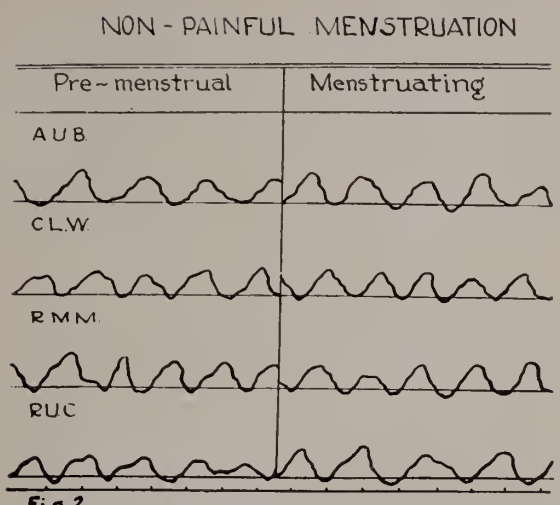

Fig. 2

Contractions in the premenstrual phase are identical with those recorded during menstruation. They are high in amplitude, atonic, and occur about one per minute.

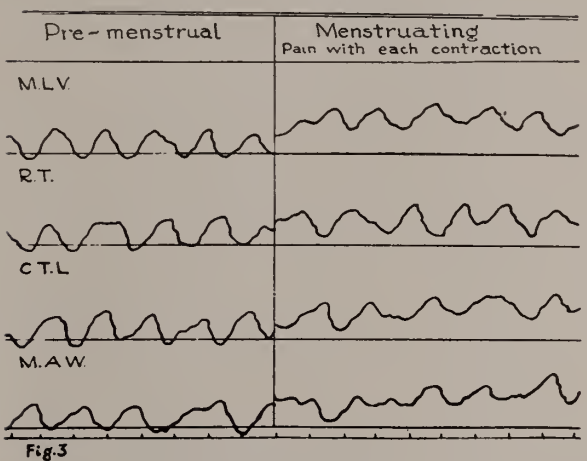

Fig. 3

At the onset of menstruation contractions are still high in amplitude but superimposed on tetany. The writing point does not return to the base line.

line, while in the non-painful group all contractions returned either to the base line or below it. For the two patients who experienced typical dysmenorrhea, but who had a normal atonic type of contraction, there is no satisfactory explanation.

Effect of Drugs on Motility in Painful Menstruation

1. *Atropine*—This drug has been frequently used on the theory that uterine cramps result from parasympathetic nerve stimulation. Atropine inhibits the parasympathetic nerve endings and thus should inhibit the contractions. Tracings were taken on three menstruating uteri after 1/100 gr. of atropine sulfate, subcutaneously. No effect upon uterine motility could be demonstrated and there was no relief from pain (Fig. 4).

2. *Ephedrine*—Two patients received ephedrine sulfate, ¾ gr. t.i.d. for two days prior to the menses and on the first day of menstruation when the tracing was taken. Contractions were not altered in amplitude or frequency, nor was there any diminution of tetany. Pain was not relieved (Fig. 4).

3. *Adrenalin*—On the assumption that sympathetico-mimetic drugs inhibit uterine contractions,

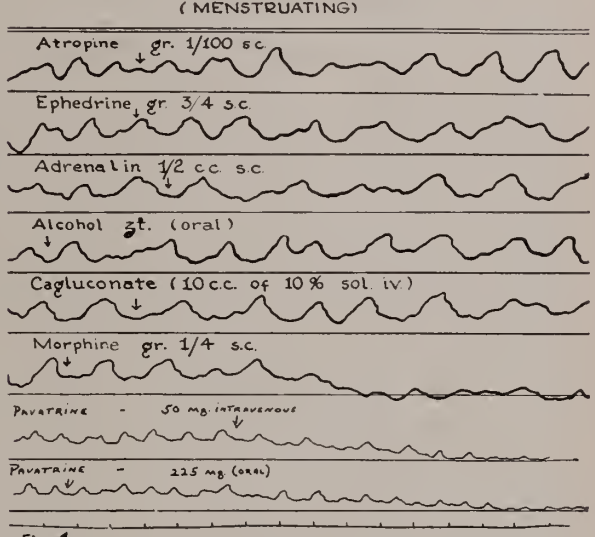
DRUGS IN DYSMENORRHEA
(MENSTRUATING)
Atropine gr. 1/100 s.c.
Ephedrine gr. 3/4 s.c.
Adrenalin 1/2 c.c. s.c.
Alcohol 3j. (oral)
Cagluconate (10 c.c. of 10% sol. iv.)
Morphine gr. 1/4 s.c.
PAVATRINE - 50 mg. INTRAVENOUS
PAVATRINE - 225 mg. (ORAL)

Fig. 4

Atropine, ephedrine, adrenalin, alcohol, and calcium gluconate have no effect upon uterine contractions during menstruation. Morphine abolishes tetany, inhibits the amplitude and relieves pain. Pavatrine, an experimental drug, is non-narcotic and has a morphine-like action.

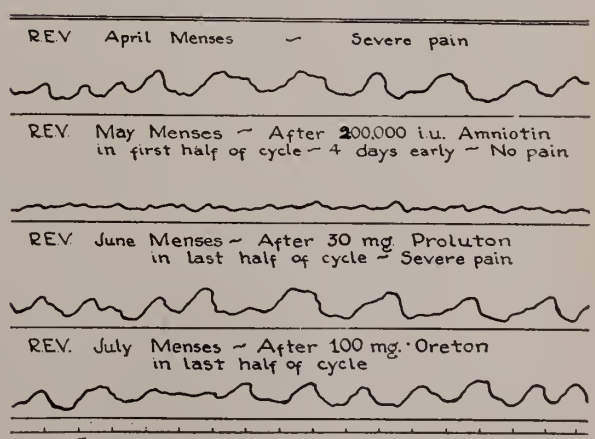
HORMONES IN DYSMENORRHEA
REV. April Menses - Severe pain
REV. May Menses - After 200,000 i.u. Amniotin in first half of cycle - 4 days early - No pain
REV. June Menses - After 30 mg. Proluton in last half of cycle - Severe pain
REV. July Menses - After 100 mg. Oreton in last half of cycle

Fig. 5

Contractions have been recorded in the same patient during four successive months. Estrogen therapy inhibited ovulation and the contractions were low in amplitude which is typical of estrogen influence. There was no pain. Progesterone and testosterone had no effect upon uterine contractions.

the use of adrenalin has been advocated in dysmenorrhea. The effect of 1/2 c.c. (1-1000) subcutaneously in four patients was studied. Some diminution in tetany was observed, the amplitude of contractions continued to be high, but did not return to the base line. Pain was not relieved (Fig. 4).

4. *Morphine*—It is well known that morphine relieves the pain of dysmenorrhea. To determine whether this was only an effect upon the central nervous system or whether it actually inhibited uterine contractions, 1/4 gr. of morphine was given subcutaneously to four patients. Within ten minutes the amplitude and rate of contractions were diminished, tetany abolished, and pain relieved (Fig. 4).

5. *Alcohol*—Whiskey is a time honored remedy for menstrual cramps. Two ounces of whiskey was given to each of three patients, all of whom said their pain was much relieved within thirty minutes. Tracings taken after thirty minutes showed no effect upon amplitude, rate, or tetany. Perhaps the vaso-dilating effect of alcohol may improve the relative ischemia of the myometrium (Fig. 4).

6. *Calcium Gluconate*—Ten c.c of 10 per cent solution of calcium gluconate was injected intravenously into one patient. There was no effect upon amplitude, rate, or tetany, and no relief from pain (Fig. 4).

7. *Pavatrine*—This is a new synthetic drug which is non-narcotic and was placed in my hands for experimental purposes. Uterine tracings have now been obtained on seven cases following the use of this new drug, one following intravenous administration and the other six after oral administration. In this group of seven patients, all showed rather marked inhibition of uterine motility except one. The tracings are shown in two cases in Fig 5. One of these cases shows the effect of the intravenous and the other following oral use. Investigation is being pursued further and it may be that this drug will supply a long felt need for the treatment of dysmenorrhea.

Effect of Hormones on Motility in Painful Menstruation

1. *Estrogen*—It has been observed by other investigators and confirmed by this study that dysmenorrhea occurs only with the high amplitude contractions of progesterone influence. Painful menstruation does not occur in the anovulatory cycle. Large amounts of estrogen given during the first half of the cycle inhibit the gonadotropic hormone of the anterior pituitary to the point where follicle rupture and luteinization are prevented. In those cases where ovulation is not prevented, the luteinizing gonadotropin may be inhibited to the point where progesterone influence will be minimized and uterine contractions will have a lower amplitude. Two patients were each given 200,000 i.u. of estrogen (amniotin) in the follicular phase of the cycle. Ovulation did not occur as evidenced by the persistent proliferative endometrium and the tracings during menstruation showed the low amplitude, high frequency type characteristic of estrogen dominance. In the absence of high amplitude contractions, no pain was experienced (Fig. 5).

2. *Progesterone*—Since Reynolds reported the inhibitory action of progesterone on the myometrium, this hormone has appeared to provide logical therapy for dysmenorrhea.[3] It has already been shown, however, that this hormone is responsible for the high amplitude contractions which are always present in the luteal phase of the cycle. In non-painful menstruation progesterone also abolishes the tetany caused by estrogen. This tetany recurs in the dysmenorrheic tracings and the logical therapy, therefore, would seem to be the artificial administration of the hormone. Two patients each received thirty mgs. of synthetic progesterone in the latter half of their cycle. High amplitude contractions persisted, there was no diminution of tetany, and no relief from pain. This observation increases our confusion regarding hormone therapy in general. I do not know why progesterone will inhibit uterine motility *in vitro* and apparently increases the force of uterine contractions *in vivo*. Why does progesterone abolish tetany *in vitro*, but in relatively large doses apparently does not affect it *in vivo?* Our increasing knowledge of the metabolism of progesterone may soon explain this apparent inconsistency (Fig. 5).

3. *Testosterone*—This hormone is said to have a direct inhibitory influence upon the myometrium. One hundred mgs. of testosterone propionate was given to one patient during the latter half of her cycle. The tracing shows no effect upon the amplitude, rate, or tetany. Pain was not relieved (Fig. 5).

Comment

Rational therapy for dysmenorrhea must be directed toward the pathological physiology of the uterine contractions. To say that the pain is psy-

chogenic, or that certain individuals have a low threshold adds nothing to our knowledge of the condition. Furthermore, it is true that the contractions during painful menstruation have a tetany not present in the normal group. Wilson and Kurzrok have recently reported a similar study in which they conclude that the uterine contractions in dysmenorrhea are not different from those seen in the normally menstruating uterus.[2] With this conclusion I cannot concur. In thirteen of my fifteen patients a marked degree of tetany was observed with superimposed high amplitude contractions. In the nonpainful menstruating uterus the high amplitude, luteal type of contractions is always seen, but never associated with tetany. The question which will immediately come to the mind of an investigator in this field is how one can determine the base line from which to measure the degree of tetany. Most uteri become spastic upon introduction of the balloon, but this artificially induced tetany relaxes after several minutes. All of the tracings in this study were done at least fifteen minutes after the introduction of the balloon. In all cases morphine, gr. 1/4, was given at the end of the experiment, fifteen minutes allowed to elapse, and the tracing again taken. This was done in order to establish the base line for each uterus. In the seven cases of nonpainful menstruation the relaxing effect of morphine did not greatly alter the base line to which each contraction returned. However, in the dysmenorrheic uteri the writing point dropped from 1/2 to 1 1/2 cm. below the lowest point of uterine contraction after giving 1/4 gr. of morphine (Fig. 4). This demonstrates rather conclusively that the dysmenorrheic uterus is a tetanic uterus.

SUMMARY

1. Dysmenorrhea occurs in the presence of high amplitude contractions superimposed upon tetany.

2. High amplitude contractions occur only in the presence of a corpus luteum. It follows therefore that dysmenorrhea occurs only in the ovulatory cycle.

3. Atropine, ephedrine, adrenalin, and calcium gluconate do not alter uterine motility in dysmenorrhea and give no pain relief.

4. Alcohol does not alter uterine motility, but appears to diminish the pain through its effect either upon the nervous system or by its vasodilating effect on the arterioles of the myometrium.

5. Morphine diminishes the amplitude of the contractions, abolishes tetany, and relieves the pain.

6. Pavatrine, a new synthetic drug, abolishes uterine tetany and diminishes the amplitude of each contraction. Pain is relieved.

7. Estrogen in the first half of the cycle in large doses may either prevent ovulation or inhibit the luteinizing hormone of the anterior pituitary, thereby curtailing the progesterone effect on the uterus. Since high amplitude contractions occur only with progesterone, these are eliminated and pain relieved.

8. Progesterone administered subcutaneously does not change the contractions during menstruation in the ovulatory cycle and gives no pain relief.

9. Testosterone has no effect upon the menstrual contractions in the ovulatory cycle and gives no pain relief.

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DISCUSSION

DR. EDWIN M. RUCKER, Richmond: The study of the problem of dysmenorrhea has given rise to many theories of cause and an even larger number of therapeutic approaches.

Dr. Bickers' study is an interesting and valuable contribution to this common disorder of function. When you realize the difficulties met in carrying out these investigations, the high calibre of the work becomes even more apparent.

The actual mechanism of pain in dysmenorrhea has been widely discussed, and there is certainly no universal agreement as to its production. Doubtless there will be found several when the whole problem is understood. Dr. Bickers' concept is novel and interesting, but by his own admission will not explain all cases of painful menstruation. Further investigation is needed. This is time-consuming and tedious, and progress is necessarily slow.

We know with a fair degree of accuracy the pathways over which pain impulses are carried to consciousness, and, armed with this knowledge, have been able to interrupt these pathways surgically to provide relief from painful menstruation in a number of cases.

It is possible to produce a temporary "sympathectomy" with procain injection of the superior hypogastric plexus or by blocking the paths nearer the uterus. A study of uterine motility in the dysmenorrheic patient following either of the procedures would be a valuable adjunct to our knowledge of this condition. Flothow has advised

this type of procedure in selecting those cases which may be expected to obtain relief from pre-sacral sympathectomy.

Dr. Bickers' analogy between dysmenorrhea and the anginal syndrome suggests also the advisability of investigating the action of the nitrates and nitroglycerin upon uterine motility. The studies made following administration of the experimental drug "346" are interesting and certainly worthy of further investigation. It may be that here is another method of relieving a certain number of patients.

The tracings which we have just seen seem to show in the cases which obtained relief not only a lowering of the tonus but a slowing of the motility of the uterus, the alcohol result excluded. These, of course, would tend to refute this theory of the mechanism of dysmenorrhea. There are two cases in this series which experienced painful menstruation but in whom the uterine motility was typical of the non-painful group. It is possible that these patients fall unto the group of the so-called "ovarian dysmenorrhea". These can expect no relief from pre-sacral neurectomy.

In considering hysterography it is well to keep in mind that the uterus is not constant in its response, and that its reaction is modified by a number of factors. Clinically it has been difficult to get away from the idea that painful menstruation is the result of attempts of the uterus to expel something. Many forcible cervical dilatations have been done and followed by relief. Can we explain this as a traumatic sympathectomy, with rupture of the nerve endings of the cervix?

A great many things will give relief for a while: cervical dilatation, stem pessary, diathermy, and so on, almost endlessly.

Dr. Bickers is to be commended on the objective approach to this problem, attempting to measure motility rather than relying on the patient's subjective response, and I believe this is a definite step in the right direction in studying this problem.

DR. H. B. HAAG, Richmond: I think it is fairly well established that, in relation to the uterus, the action of the estrogens is associated with an increase in the acetylcholine content of that organ. Hence, it may be that Dr. Bickers might get some interesting results by studying the action of physostigmine and other similarly acting drugs, although this would seem opposed to present therapy in which atropine and related substances are being used. It might also be desirable to try atropine in somewhat larger doses.

I also want to commend Dr. Bickers for doing this type of clinical investigation. I think that if pharmacology is going to advance as rapidly as it should, it is this type of work that will be of inestimable assistance.

DR. R. J. MAIN, Richmond: I wish also to commend Dr. Bickers for making this research. From the physiological standpoint I want to stress one point that Dr. Bickers probably did not have time to mention: that we should not draw the conclusion that a normal woman has such motion of the uterus. These responses are obtained when we distend the uterus under definite pressure, and below that pressure we get no response. In other words, this is really a theoretical curve called uterine motility, or, better, uterine response to distention. However, in cases of dysmenorrhea, it would be interesting to see if the contractions during the pains that they have are the same that they have normally without distention. It may be it would be worth while for Dr. Bickers to try recording it under low tension, very low tension. In cases of dysmenorrhea you should find these rhythmical movements, whereas in a normal uterus there will be no response.

DR. E. L. LOWENBERG, Norfolk: I have studied completely Dr. Bickers scientific exhibit and also enjoyed his paper. I think one point is to be stressed. That is the miscellaneous use of hormones without knowing why we use them and what they may be expected to accomplish. It is certainly unwarranted until more research which is now going on is done. The effect of these hormones on uterine motility as discussed by Dr. Bickers helped us understand the effect of the hormones on the uterus. The vaginal smear method enables us to study the ovarian cycle and the changes brought about by hormone therapy. We may sooner or later understand the hormones and apply the therapy in a scientific manner.

DR. BICKERS, closing the discussion: Dr. Main, Professor of Physiology, has been my guide and advisor in the technical laboratory part of this investigation and full credit should be given him. Together we overcame many difficulties in evolving a simple, practical technic for recording these contractions.

Dr. Haag made an interesting suggestion and I shall see if I can follow through on that. Dr. Carter brings up an interesting point which may cast some light on the whole question of uterine muscle physiology. What will sympathectomy do to the uterine contractions? I don't know but I would certainly like to have the opportunity of studying such a case. I do not believe that contractions will be affected by sympathectomy because I firmly believe that most of the motility in the human uterus is intrinsic in the muscle fibre itself and the nerve supply is regulatory in its effect only. The same thought comes up in connection with the use of procaine as suggested by Dr. Rucker. I have not studied contractions after parauterine procaine injection but it would certainly be worth doing.

THE EFFECT OF WAR ON THE BEHAVIOR OF CHILDREN*

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If one could only present a paper like this as dramatically, yet in a way as psychologically sound, as MacArthur answers his Headquarters phone today with those two meaningful words—"Bataan speaking!" we should go out of here pledged to an immediate counter-offensive on any and all Virginia fronts where youth is in doubt or trouble; also on those fronts where it is predictable that circumstances may baffle him tomorrow.

But those words "Bataan speaking" have meaning because of courageous realism in studying the Pacific problem; because of hardheaded historical perspective; because of unlimited research; because of pooled techniques as to tactics and strategy; and because of a human approach that denied an ancient clichè that "never The Twain shall meet."

In the far less colorful words of this paper, which surveys a limited field you may or may not find parallels in your own fields. Mental hygienists may have tremendous tasks for years to come in protecting the mental health of children during World War II and when it is past, for the aftermath of war may be even worse than war itself unless we take stock now and prepare for it.

What does war do to children? Prior to this war, little has been reported on the psychological reactions of children exposed to warfare. Practically all of the scientific articles and books on the psychoses and neuroses of war deal exclusively with adults. According to H. Crichton Miller, "War arouses in the individual fear concerning the nation, the local community and the family circle." The main sources of such fear are: (1) The risk of attack and injury; (2) Economic changes; (3) The threat of family separation; and (4) The threat of shortage of food and deprivation of luxuries and pleasures! This war includes all the fears and dangers of other wars plus those due to the bridging of distances.

In no other war were there radios to invade the home and bombard the inmates with news of ruin or impending disaster. In other wars, the soldier felt that he was acting in defense of the home. Now, because of air raids the home may be the actual theater of war with casualties among the soldier's family. Many an English school child has returned home from day school to find the home gone. Added to the increased hazard to the four walls of the home are uncertainties and fears that grow out of these hazards. And fear is something we don't know much about. Fear is like fire and water and wind, a good servant but a bad master. It is so contagious that it is relatively easy to stampede a herd, whether of people or cattle, and in such a stampede many destructive forces may be unleashed.

At the outbreak of World War I, a decreased delinquency, not wholly attributable to the enlistment of criminals, was generally observed and may be partly accounted for by the outlet provided for aggression. Later this change was reversed and an increase of over 150% was recorded in Berlin during the period of 1914-16. 97% of the 1916 cases were for larceny. After the war, there was an increase in juvenile delinquency in the United States, followed by a period of decrease. More recently from Great Britain comes the following report about World War II ("*Time*", March 24, 1941):

"Great Britain's figures covering only the first four months of 1940, showed a 50 per cent increase in crimes committed by children under 18. Chief offenses: stealing, breaking into homes and shops.

"Manchester suffered a juvenile crime wave that set an all time record up 77 per cent over 1939. Of 1,323 children indicated on criminal charges, 797 were boys and girls of 14 or less. The rest ranged in age from 15 to 17.

"In London (March 20, 1941) juvenile courts were sitting double their pre-war hours to hear the stories sullen juniors told them. One curious fact they had unearthed: poverty does not, as in peacetime, lead to crime. On the charge sheet 20 boys were listed in a day, eight of them only 16 years old. All were earning salaries big enough to support a respectable family before the war. Scores of one time errand boys were doing demolition work at L 4/5 ($17.00) a week. They gave their mothers $6.00, squandered the rest on liquor, gambling and girls.

"Principal cause of Britain's youthful crime wave was

*Read before Joint Session of the Mental Hygiene Society of Virginia and the Virginia Conference of Social Work, April 24, 1942.

the relaxation of grown-up authority. Many a father had gone away to camp, or worked overtime in a war factory. At least half of London's compulsory grade schools had been destroyed by bombs, or converted to other uses. Parents had put their children to work (or taught them to beg) in order to bolster family earnings. With boys' clubs broken up by evacuation, social centers taken over for war work, high-spirited youngsters turned to crime out of sheer boredom.

"Britain's Government and press racked their brains, wondered what to do with youthful criminals. Homes for delinquent children were overflowing, convicted moppets were being crowded in prisons with hardened felons. Britons rubbed their eyes and thought of Indiana's John Dillinger when one day (last week) five young desperadoes broke out of Borstal Prison, piled into the governor's car and made off."

We may have to deal with a similar situation if war comes closer to America. Not due just to a breakdown of parental authority but also to lack of adult guidance and a definite program that youth needs and desires.

Report from Tavistock Clinic in England gives a Summary of Debate between clinicians as follows: (see *Lancet,* January 25, 1941, P. 121).

"After the last war children grew up under strain, with resulting catastrophe. This war added to war-strain the problem of separation from home and from the protection of its authority; and the threat to mental health is a serious one. A worker among 15,000 city bred evacuees stated: Symptoms produced by bombing were easy to clear up. Those due to separation were much more difficult. 420 cases of breakdown occurred—249 boys and 171 girls (7½ to 11½ years old). This was rather surprising as emotional tension was supposed to be at its lowest at that age. (Several clinics reported cases of anxiety states with baldness among children following air raids.)

"Psychoneurotic and behavior disorders represented 25% each. Psychoneurotic cases consisted of: enuresis, incontinence, hysterical vomiting, sleepwalking, fits and tics. The percentage of anxiety depression cases is now the highest of all. In face of constant difficulties and dangers *there seemed to be a tendency to regress to an earlier stage of development.* Some physicians were of the opinion that the evacuated child was worse off than the child left in London."

The Bristol Child Guidance Clinic (*Lancet,* November 8, 1941) noted a marked increase in juvenile delinquency mainly in the dull children (I. Q. 70 to 85). They have increased six fold in delinquency, and represent one-third of total cases. These children at 14 years have mental ages ranging from 9½ to 11½ years. They have little foresight and are unable to plan. Their memories are so poor that they learn slowly from experience. They are more suggestible and easily led astray. They require much more supervision than normal or average children. Under war conditions they are receiving not more but less supervision. The high grade feebleminded children represented a fifth of the cases, and showed an increase of 40% in delinquency.

Dr. Gillespie of Guys Hospital, London, in "Psychological Effects of War on Citizens and Soldiers" states that children who have been through raids in houses not hit by bombs showed no lasting effects of the experience.

In a follow-up of 44 surviving children who were in a bombed hospital only five had symptoms traceable to their experiences. These were children under 5½ years. The children five to eleven regarded the bombing as high adventure and those over eleven showed chief concern for the younger children.

The Bristol Child Guidance Clinic reported (*Lancet,* October 4, 1941) "Of the children exposed to a major air raid 61% showed signs of strain for a period of between three weeks and two months. After seven months 11% of the children still show persistent symptoms."

Dr. W. E. R. Mons, a School Medical Officer (reporting in *British Medical Journal,* November 1, 1941) tells of the behavior of the "bombed" child: "Previously good and intelligent children became suddenly obstreperous, destructive, mischievous, lazy, truant from school, and, in short, unmanageable. These children reveal as the foremost symptom a strange inability to occupy themselves constructively in their free time." He states further: "Air raid shock is not a neurosis in the true sense. It does not affect only those with a strong predisposition, as in the case of the war neuroses, though it is easy to discover such predispositions in a large percentage of the children." (Rorschach used as diagnostic aid.)

Anna Freud's observations on children in the Freud nurseries indicate that so long as bombed children are not separated from their families or a

familiar parent substitute they do not seem to be particularly affected by air raids. She thinks that the greatest harm to the children under fire is that their destructive impulses instead of being socialized as in peacetime will find justification in present war conditions with their incidents of wholesale destruction. Instead of being shocked into illness as some have supposed, the tendency is for such children to become brutalized. For this reason children have to be safeguarded against the primitive horrors of war.

Those of us in the United States who have worked with children since World War I have had many cases from homes which were disrupted by neuropsychiatric casualties, in or other ways, as a result of the war. We have case histories in the files of the Children's Memorial Clinic of disturbed children from homes of World War Veterans. We also know that in the midst of the depression following the war there was a tremendous rise in the number of children who placed security as the thing most to be desired among their wishes. In the days of depression, security meant a job or some possibility of maintenance which would not be at the expense of personal dignity. Today security connotes protection from actual physical danger. We know that among our former patients were a group of older adolescents who were balked in making normal adjustments in wage earning and who, as a consequence, developed habits of idleness, unwholesome personality traits, and behavior problems for which heavy penalties were paid in later years. We know that the past decade's problem of the vast army of unskilled workers can be traced to World War I. Is it a significant fact that a large proportion of the dangerous criminals of today are in their twenties? They were very young children during our participation in World War I. At that time Americans who stayed at home were in the midst of much bickering and violent talk. In many homes there was rejoicing over the killing of the enemy. In some the hope was freely expressed that Hun babies might be murdered in the same way that it had been reported that infants of other nations had been massacred. Everywhere adults were at a high pitch of emotion. In looking back on those days, it is not surprising that children born in such an atmosphere of hatred and violence should have accepted violence as a normal way of life, and that the more unfortunate ones, unchecked by social taboos, at adolescence entered upon careers of robbery and murder. Nor is it surprising that we have found frequently among others now in their early twenties the expressed belief that another war was needed; nor is it surprising that many of the boys 18 and 20 are looking upon the Army as a source of security and have gone to it for refuge after the failure of our social order to provide jobs or make them feel that they are wanted. Some of them, now that they know the armed forces want them, are expressing satisfaction in a way of life that is more acceptable than what they have known. The effects on children of the present epoch of insecurity cannot yet be measured, but will probably be more tangible years after this period of emergency has passed.

The fact that so little has been reported in regard to the psychological and other reactions of children in war time should be a challenge to us to keep better records and accumulate data on which more adequate research might be based. Our experience in Virginia with the War Between the States, and World War I, has taught us what war does to the family and consequently to the child. War takes away the father or brother, throws the mother into unaccustomed tasks outside the home, disrupts the relations of parents and children, may change destructively the pattern of community living. Communities are denuded of doctors, ministers, teachers and other leaders—all needed in the war machine. Social services are stripped to the barest skeleton and mental hygiene clinics may be reduced in function; although it is gratifying to note that in England they found it necessary to establish from 4 to 5 child guidance clinics in each of the counties in order to take care of the problems which arose in the dislocations following the transfer of children from city to the country, but many such clinics will be affected because the Army needs all available psychiatrists. When the war is over, we shall have to deal with chaotic conditions which invariably follow in the period of readjustment. In this country, of course, many of our clinics may be reduced in function, because the psychiatrists are needed in the Army. During and after the war health conditions of many groups may suffer as a result of rapidly expanding war work centers, housing shortages, etc. Many strange family situations

will arise to affect the mental health of children. If clinics, schools, and social agencies are to play a part in the conservation of child life in war time, we must see to it that these agencies are disturbed as little as possible by rapid turnover on the staff, lack of finances, etc. In England the transfer of city children to the country, because of the war, exposed more graphically than any other medium the inadequate recreational, education, and housing facilities, health services, etc., available to underprivileged children of English cities, and when the countryside was put to the test of caring for these children, it became apparent how thin the social services of the countryside were.

Eleanor Glueck in *Survey Graphic*, March, 1942, states "If we can anticipate any parallel with the English experiences in the first year of war, before community resources were mustered, it seems evident that we must expect a marked increase in our own rate of juvenile crime. At the end of the first year of war the English Board of Education reported that the number of children under 14 convicted of offenses was 41% higher than in the previous year; in the age group from 14 to 17, 22% higher. The increase was largely in burglars, looters, and thieves."

Now, what do we find in the United States? So far the reports about juvenile delinquency are somewhat conflicting. Here are some sample reports from Virginia Juvenile Court judges:

CITY NUMBER ONE REPORTS: "I do not think that there has been any change which is directly attributable to the war, in the delinquency situation here. I doubt whether such results as may follow have had long enough to develop.

"There has been some delinquency which may have been caused by housing congestion here due to the large increase in population and inadequate housing, but it is difficult to trace any cases directly to that.

"There has been an increase in the number of young girls leaving home elsewhere and coming to our city because of the number of young men in the military and naval forces here; and also difficulties with the girls here who run away from home and make contacts with sailors, particularly." According to my definition of delinquency the above picture shows an increase especially in the missing girl problem, directly attributable to war.

CITY NUMBER TWO REPORTS: "You will observe that the total appearing for the first quarter of the current year is appreciably lower than the number appearing for said quarter during either of the preceding four years. I have tried in vain to procure reliable statistics on juvenile delinquency during the first World War. As you know, the Virginia Juvenile Courts were established immediately following the termination of that War and there is apparently no reliable data on the situation in Virginia.

"Personally, I doubt if we can believe that the decrease over the first quarter of this year, as reflected by the above tabulation, is due entirely to the War. Nevertheless, most of our delinquent children do come from homes, inadequately provided for. The large Ordnance plant nearby and the bag loading plant employ, at almost unprecedented wages, a large number of the parents of our children who have had contact with the local juvenile court. This circumstance, I feel confident, has had a most uplifting effect. Again, quite a number of local children who have had contact with the court are presently engaged in some branch of the civil defense which activity has a tendency to curtail delinquency. It is my pure guess that the War, while it lasts, may tend to decrease juvenile delinquency here. However, I fear that if real effort is not made to prevent it there will be a definite increase in juvenile delinquency in this city, state and nation immediately following the cessation of hostilities."

CITY NUMBER THREE REPORTS: "The number of delinquents actually on the docket of the courts has increased to some extent, but the number of complaints from parents and cases handled unofficially has increased very much.

"I have noticed that the hysteria that follows war is noticeable in children from hearing the parents discuss the war and listening to war news; this should certainly be forbidden by parents, because the child is emotionally upset and I am afraid that this will have its very serious consequences upon the adolescent child, because at this age as you well know children's opinions and outlook on life are easily changed. I always look at a child and think of an individual with a vista of life of fifty or sixty years and then I realize how careful the courts should be in handling children. I only wish parents

could realize this. We would perhaps have less delinquency."

CITY NUMBDR FOUR REPORTS: "My impression is that there has been a definite increase in the number of young girls involved in sex escapades and of boys mixed up in theft of cars and other forms of stealing. The number of cases cited I think is not sufficient statistical evidence to determine just what is the trend."

CITY NUMBER FIVE REPORTS: "We have had a small decrease in juvenile delinquency in the past three or four months, and a slight increase in domestic cases. Since work has been so easy to find, and wages good the men desert their family and refuse to send any money for the support of their dependents. Desertion and non-support is one of the most serious problems we have at present. Outside of the above mentioned problems we are almost stationary, very little difference either way."

Now, as to the recent behavior of our children under treatment at the Children's Memorial Clinic we can report as follows: Since Pearl Harbor our children seem to be less anxious. Part of their change of attitude may be accounted for by the many convoys passing through Richmond, and the other evidences of our preparedness, plus a change in parental attitudes, plus the reassurance received from clinic contacts.

Here are some of their reactions: "I feel safer when I see so many soldiers," said a boy of seven who used to have terror dreams about the war.

"My father used to say our Army was so small it wouldn't be a flea-bite to Hitler", commented a twelve year old boy, "but he don't talk that way now. We stood on the street three hours watching truckloads of soldiers and tanks and guns roll by and I'm not afraid anymore." Said a 13 year old, "I used to worry about the war because I thought it would last so long that Hitler would come over here and lick our little army and kill us. Now when I see so many convoys my only worry is because our army is so big that it will end the war before I am big enough to help."

Of course, I don't think that these children have been reassured solely from what they themselves have seen. The confidence and optimism expressed by these youngsters today is in large measure a reflection of the change in attitudes and feelings of their parents plus example, plus the therapeutic impact of clinic treatment which includes reassurance and interpretation.

There are still some phases of the total war picture that cause our children to worry. The more intelligent ones sometimes express fear that male members of their families will be called away for military duty, but these fears are not as obvious as the picture of anxiety which they showed a year ago when Richmond parents were talking about the invincibility of Hitler's armed forces and predicting disaster for anybody who dared stand in the way of the Mad Man of Berlin, and the radio was going constantly sounding its voices of doom.

I don't know how to evaluate all this. Children have always reflected the thoughts, opinions, and attitudes of their parents. Boys and girls of the frontier days feared the Indians, and between raids had terror dreams about them. Later they dreamed the British were coming, and during the war between the States they were afraid of what "the Yankees might do".

Abstract peril frightens youngsters much more than concrete danger. We can cite a number of cases of children who were continually frightened by the abstract who rose to heights of heroic achievement when faced by some real danger.

Since Pearl Harbor most of our children have expressed confidence of allied victory.

The younger children (under 8) "go for" the war toys in my office. Once I did not include any war toys among our playthings, but I observed that the youngsters took ordinary boats which they had made in our Therapeutic Workshop and called them battle-ships, and used regular civilian type planes to bomb the doll house. This popularity of war toys is, of course, to be expected. I remember how I used to sink the Spanish fleet in our mill-pond.

The children who a year ago were working on plans for air raid shelters are still at it and seem to get a feeling of confidence by elaborating their plans. Others are digging caves for shelters.

Here are two extra-clinical reactions since Pearl Harbor — Carolyn, a bright 9 year old, in response to an air raid warden's questionnaire had terror dreams which she recited at breakfast. The only other terror dreams she had ever related followed the burning of the house next door before midnight the year previous to this. The child was

allowed to relate her dreams at breakfast uninterrupted. The father who never forgets Carolyn's ready sense of humor weighed her question—"I never thought Hitler would bomb us—Will he, Daddy?" The father replied "Why Carolyn, of course, Hitler has a list and this little house is first on his list. It's marked with a big X. And who do you think comes next on his long list?" She answered, "I don't know." The father said, "Why think a while, Carolyn—President Roosevelt comes next! Now who do you think comes next?" By this time she was smiling and countered quick as a flash. "I know! Mickey Mouse comes next"

Another girl of twelve asked immediately after war was declared: "Will schools close? Will I have to stand in line for sugar? Will Hitler bomb us?"

Other behavior reactions observed in our clinic showing how the war has affected the children in various ways include the following: Treatment for a boy 9 years old had to be terminated because the father was transferred to another city. The father is a civil engineer employed on a defense job. The boy was showing definite improvement. Psychiatric service is probably not available in the city to which the family have moved.

A boy 15 years of age was referred by the Juvenile Court. He is obviously rejected by his parents, particularly the father. Industrial school was thought the most advisable plan to meet the boy's needs. The father did not want this arrangement saying that he thought such a record woud keep him out of the army and he is anxious for him to join as soon as he can.

A mother reported that she had not realized the effect of radio news pertaining to war on her two children age 10 and 12 until recently when she encouraged the children to listen to the broadcasts of the English children to their parents. Both of the girls ran crying from the room and begged her to turn off the radio.

A boy, age 8, comes from a broken home. He has been dragged about the country from place to place and this fall was reunited with his father. He had developed many fears but under treatment is showing improvement at present. He is living in a foster home. The father stays in the same home. Recently, however, the father said he fears that he is going to be sent on a war industry job in a congested camp area and wonders about plans for the boy's care.

A number of children who are being seen for psychiatric treatment once a week cannot have as frequent interviews because of lack of transportation facilities. These particular children living in foster homes in the country are under the care of a children's agency. Because of the need to save on transportation, due to tire shortage, less frequent visits must be made regardless of the need.

A girl age 6 cared for in an orphanage and seen at the Clinic because of being slow and also having an anxiety neurosis had an attack during the practice black out in Richmond.

One boy worries because he is part German. He is an unwanted child who feels most inadequate. He likes to talk "big", tends to bully other boys, is extremely noisy and destructive. In Workshop he made a clay head of Hitler and later a papier machè Hitler head which he exhibits proudly.

A boy who has a vivid imagination talks of a death ray which will put all enemies out of commission. This boy has never made a satisfactory group adjustment. He is afraid his Daddy will have to go to war.

An adolescent girl thinks the soldiers who swarm into town on weekends are lonesome and she attempts to comfort them by giving all they desire.

A boy of 14 says he hopes the war lasts long enough for him to get in it.

Now, what can we do? The way is pointed in *"Survey-Graphic"* April, 1942. "A Children's Charter in Wartime adopted by the U. S. Children's Bureau Commission on Children in Wartime at a Conference in Washington March 18, 1942" states "We are in total war against the aggressor nations. We are fighting again for human freedom and especially for the future of our children in a free world. Children must be safeguarded—and they can be safeguarded—in the midst of this total war so that they can live and share in the future. They must be nourished, sheltered, and protected even in the stress of war production so that they will be strong to carry forward a just and lasting peace. Our American republics sprang from a sturdy yearning for tolerance, independence, and self-government. The American home has emerged from the search for freedom. Within it the child lives and learns through his own efforts the mean-

ing and responsibilities of freedom. We have faith in the children of the New World—faith that if our generation does its part now, they will renew the living principles in our common life and make the most of them.

"Both as a wartime responsibility and as stepping stones to our future and to theirs—we call upon citizens young and old to join together to—

"I. Guard children from injury in danger zones.

"II. Protect children from neglect, exploitation, and undue strain in defense areas.

"III. Strengthen the home life of children whose parents are mobilized for war or war production.

"IV. Conserve, equip and free children of every race and creed to take their part in democracy."

Some of the immediate things which seem to stand out are: 1. Utilize the English plan of diverting the energies of children from destructive and negative activities to constructive community effort. To carry this out it would be necessary to provide day care either at nurseries or public schools for the younger children, and for the older ones planned activities such as those of the Youth Service Corps whose functions range from filling sand bags for the Home Guard to collecting music for the Navy. Also, they act as messengers for air wardens just as our scouts do. Some of their energies could be directed to salvaging waste products such as scrap metal, paper, rags, etc., and helping with collection of trash. The program could be enlivened by drills to music, dramatics, art classes, and various forms of athletics.

2. Enlarging Crime Prevention Bureaus where they already exist as in Richmond and establishing them in other places where needed will lengthen and strengthen the arm of the law. The Crime Prevention Bureau is able to reach out and deal with conditions in public places which endanger the welfare of children and adolescents, and to reach individual cases of delinquents and pre-delinquents. The Crime Prevention Bureau has men and women with some training and experience in social case work, so that they can recognize the nature of the problems they meet and refer them to the appropriate social agencies for rehabilitation or preventive treatment.

3. In addition to the burden now carried by Social Agencies and which will be greatly strained, there is a need for schools and churches to assume additional functions. In the schools may come the first recognition of the potential delinquent. Whatever facilities exist in schools for the recognition and treatment of children with special problems should be increased and improved. This should include counseling by trained counselors. The school is a substitute home—a familiar home. In these times with the parents both perhaps in war industry and away all day, the school could serve even more adequately as a base for the child. It might even stay open during the summer in such areas where there is need of this, and may plan a special program of activities including nutrition, rest and recreation, as well as some constructive work.

Churches can help especially in building up the morale of children and adolescents by demonstrating to them how they can serve their country, their church, and their homes by unselfish participation in the war effort. *Each and every child and youth must be made to feel necessary.* This is something that we have failed to capitalize upon as adequately as the totalitarian countries have done.

Perhaps America's greatest casualty from the last war was a narrow nationalism, an anachronistic isolationism that filtered into too many homes, too many classrooms, and led too many professions to a smug unawareness of the interdependence of all peoples everywhere. At the close of the war, as a juvenile court judge has stated, there were very few juvenile courts. Also, there were even fewer psychiatric clinics for children. Today we have an extensive juvenile court system throughout the United States and child guidance clinics and other psychiatric clinics for children have increased a hundred fold. Social services and other community resources have reached levels undreamed of in those days. The present war has stimulated a world consciousness among our youth to such an extent that even the least among them are better informed and are doing more thinking about the world conditions of life in our time than the most thoughtful and best informed youth of 1918. The future of education, character training, mental hygiene and other medical and social services, art, music, and so forth, all of these things enter into the thinking of youth of today. They are not so preoccupied with the war that they cannot do some post-war planning. This is even more apparent to those who in

addition to daily contacts with youth listen to such programs as Town Hall programs. In a recent meeting youths asked repeatedly how to combat the ideology of Nazi youth, and insisted that their elders and leaders give clear, honest answers.

Today we have the *framework* to do sound preventive work. Schools and churches and medical and social forces everywhere must do a better job than in 1918. Today we in Virginia have an opportunity to mobilize our resources to avert a chaotic increase in delinquency. To do this we may have to re-evaluate some of our services. To do this we shall have to show a flexibility in planning, and a soul-searching honesty instead of a facility with statistics. And there is no time for sparring. This means a *cooperative* job. It means taking counsel within our state and with leaders from beyond our borders—as some communities are doing. It necessitates an intelligent awareness of how, when and where we should supplement community resources with such national organizations as U.S.O. as has been done in Norfolk, Dublin, Alexandria, Petersburg, and other communities, and as Sandston is now in process of doing, or by N.Y.A. as has been done in Roanoke and other cities.

Wherever a community faces rapid expansion because of war industry areas or cantonments, wherever the city or town is a "place of leave" for the armed forces, it seems likely that local resources must be augmented. Such expansions will not, according to the law of probability, decrease the problems normally handled by the community agencies whose work load throughout Virginia we have been told is a full load. Realism at this point seems to challenge us to take a lesson from those communities that are solving their problems, regardless of geography, or politics, or the previously accepted pattern.

Here, too, youth's questions may give us a lead. Listen to a husky 14 year old boy, an only child, who says "I want a job this summer. My father and mother are both working. I have to spend my summers at the beach—not this year! I'm too young for most jobs I've looked into. What shall I do? Will the Farm Corps just set up be his answer, or what?

Or listen to these questions from young adults: "Why are there such long queues of soldiers waiting for food as I saw here (Richmond) Easter Sunday? *Must* certain restaurants close on Sunday?" "Why do Navy men say they are better liked in Richmond than are soldiers?" This question I found later referred to the quarters furnished by Navy Mothers.

Or another asks, "How do the soldiers pick up such baby-dates as we see in the Sunday movie crowds?"

These are youth's questions. Are they also yours?

Let us return to the quotation from the judge of the juvenile court of Virginia City Number Three, "I always look at a child and think of an individual with a vista of life of fifty or sixty years."

This long-view challenges us to social-planning that will decrease delinquency, nor is its meaning related only to a time of emergency. It *is* related directly to winning the war and planning for peace. Even the gloomiest pessimist is not apt to predict an emergency of 50 years. The sternest challenge of this long view is to see in the boys and girls of today the potentials of leadership which the world will sorely need tomorrow. As Lewis Mumford phrased it, *"They are the cultural seed corn of tomorrow. Save the seed corn!"*

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DISTURBANCES OF CARDIAC RHYTHM*

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In beginning a study of abnormalities of cardiac rhythm, it is perhaps best to review briefly the anatomy and physiology of those structures concerned with the propagation of the heart beat.

*Presented before the Norfolk County Medical Society, November 17, 1941.

The sino-auricular (Keith-Flack) node, composed of striated fibres whose cells are smaller than those of auricular muscle and which are innervated by both the vagus and sympathetic nerves, lies in the sulcus terminalis, at the junction of the right

auricular appendage and the superior vena cava. The atrio-ventricular node, similar in appearance to the sino-auricular node, is located on the right side of the inter-auricular septum; and proceeds into the auriculo-ventricular bundle (Aschoff-His-Tawara), which forms the conduction system between auricular and ventricular tissues. As the bundle approaches the intraventricular septum, it divides into the right and left bundle branches, the right arborizing downward on the intraventricular septum before it spreads, the left bundle branch dividing into three smaller branches which then spread to form the subendocardial interlacing network known as the Purkinje fibers.

The excitatory factors initiating the primary propagating impulse at the pacemaker are incompletely understood, but it is believed, theoretically, that the initiative is produced by a change in electric potential in the nodal cells, due to an unstable state of equilibrium between negatively charged ions in the cell protoplasm, and positively charged ions in the surrounding tissue fluid. The change in electric potential leads to chemical changes, it is believed, which cause contraction of the cell, and a spread of local current from the active negative cell to nearby inactive cells. In the auricles the impulse spreads radially until the auriculo-ventricular node is reached, ending auricular systole. The stimulus then slows, passes through the auriculo-ventricular node and bundle, then through the right and left bundle branches to the Purkinje arborizations, completing ventricular systole. After a brief period of rest, the excitatory process begins again at the sino-auricular node.

Instead of following the usual classification of irregularities of the heart beat on a physiological basis, this review will concern itself with the diagnotic differentiation of clinical problems as they present themselves. Thus, we will consider the regular, but rapid heart beat; the slow, regular rhythm; the rapid, irregular mechanism; and, finally, the slow, irregular action.

The rapid, regular heart beat offers the problem of differentiating between, in the order of their clinical frequency, sinus tachycardia, paroxysmal tachycardia, and auricular flutter.

Sinus tachycardia consists in a regular cardiac action at a rate which is maintained above the accepted limits for that individual. The onset and disappearance are usually gradual. It is generally due to joint effect of suppression of vagal, and stimulation of the sympathetic, influence upon the sino-auricular node. It occurs as a normal phenomenon in some individuals, may be the physiological result of excitement or exertion in others, or may be the effect of the action of drugs such as atropine or epinephrine. On the more serious side, it may be the effect of active cardiac disease, or of congestive heart failure, or thyrotoxicosis, or the reaction to the fever accompanying infectious diseases. Sinus tachycardia of the simple type presents no prognostic problem; when it accompanies cardiac failure, thyroid disease, or acute infectious processes, the prognosis is that of the underlying condition. Treatment in sinus tachycardia must consist in removal of the cause, whether it be psychogenic or organic in origin.

Paroxysmal tachycardia is due to a rapid, usually regular rhythm, of sudden onset and sudden offset, originating in some point in the auricles, ventricles, or junctional tissues, generally outside of the normal pacemaker. The rate usually is between 160 and and 180, but may be as high as 240. In rare cases there may be a gradual onset and disappearance. The commonest type is auricular paroxysmal tachycardia, occurring about 20 times as often as the ventricular variety. The prognosis in this type is good, generally speaking, because it usually is not associated with organic heart disease. Paroxysmal tachycardia of the ventricular type, on the other hand, is very important, because it usually signifies a very serious cardiac ailment, and may in itself be a terminal condition. Fortunately, this condition is rare, but sometimes occurs clinically as a prelude to ventricular fibrillation and death in coronary artery occlusion. It is similar outwardly to the auricular form except that it is less regular, a slight fluctuation in rate becoming evident in successive minute counts. Junctional tachycardia is very rare, and is unimportant when it is of short duration, but most cases reported have persisted for many months; and the cardiac reserve has been diminished as a result of the persistent rapid rate. The treatment of paroxymal tachycardia may be simple or difficult. Fifty per cent of cases are said to respond to carotid sinus pressure, the oculocardiac reflex, or vagal stimulation in some form. For direct parasympathetic stimulation, acetylbetamethylcholine has been used in does of 10-40 mgm., and is successful in 75% of the cases. Intravenous

use of calcium chloride or gluconate (10 cc. of 10% solution); magnesium sulfate (10 cc. of 20%), digitalis (0.5 gm.), and quinine dihydrochloride (0.5 1.0 gm.) has been suggested and these medications are highly efficacious. The intravenous digitalis is indicated particularly, of course, if cardiac failure impends. It has been claimed recently that intravenous quinine dihydrochloride will bring about cessation of the attack within 45 seconds; but fatalities with this drug have been reported. Quinidine sulfate by mouth has been effective in high dosage, as much as 0.4 gm. every hour for 8 doses. A maintenance dose of quinidine serves to diminish the frequency and duration of succeeding attacks, as do daily prophylactic doses of either calcium or potassium.

Auricular flutter is a disturbance of auricular activity characterized by abnormal, regular contractions at a rapid rate, between 200 and 400 a minute, with an average of 300, the ventricular rate depending upon the degree of auriculo-ventricular block which exists. Rarely a 1:1 rhythm occurs, in which case the auricular and ventricular rates are equal. Usually a 2:1 block is present, with a ventricular rate of 150; if the block is 3:1, the ventricular rate will be 100. Occasionally the ventricular rate exhibits an irregular regularity because of varying degress of auriculo-ventricular block. Auricular flutter probably is produced by a circulating wave of excitation and contraction about the great veins of the right auricle. If the rate of the circus movement exceeds 400, it may blend into auricular fibrillation. Auricular flutter, like fibrillation, occurs most often in the presence of heart disease; and only rarely does it occur in a normal, healthy heart. Most commonly it is found as a complication of rheumatic heart disease with mitral stenosis, hypertension, thyrotoxicosis, and occlusive coronary artery disease. Auricular flutter is usually not serious in itself, but prolonged tachycardia in cases refractory to treatment may lead to heart failure and death, when the flutter complicates a serious heart disease. Auricular flutter responds better to digitalis than to quinidine. Sometimes complete digitalization will cause a return to normal rhythm; in other cases digitalis will change the flutter to auricular fibrillation, and at this point withdrawal of the drug may induce a normal rhythm. If digitalis produces a slowing of the ventricles but no change in the auricular rate, it should be continued in maintenance dosage. If digitalis is unsuccessful, a course of quinidine should be given, consisting, as suggested, in 0.4 gm. every 2 hours for 5 doses a day, continuing this for a week, if necessary.

A slow rate but regular rhythm may be simply a manifestation of sino-auricular bradycardia, or on the more serious side, of auriculo-ventricular block with complete auriculo-ventricular dissociation.

Sino-auricular bradycardia, which is due chiefly to excessive vagal effect on the pacemaker, is a normal mechanism at times. It may, on the other hand, be a reaction to increased intracranial pressure, jaundice, or certain diseases such as influenza or typhoid fever.

Complete heart block must be suggested when the rate falls below 40 a minute. In this condition, there is complete dissociation, the auricles responding to the sino-auricular node, the ventricles beating independently at a slow, regular rhythm, activated by the auriculo-ventricular node. Auriculo-ventricular nodal rhythm, an extremely rare condition, differs from the above in that both auricles and ventricles respond to a stimulus arising in the auriculo-ventricular node. It is in complete heart block that the dramatic picture known as the Adams-Stokes syndrome occurs. Perhaps as the result of temporarily increased vagal tone, there may occur a prolonged period of ventricular asystole, which results in convulsions and collapse due to temporary cerebral anoxemia. Among the etiologic agents causing heart block are rheumatic fever, diphtheria, coronary sclerosis, syphilis, congenital defects, and tumors. Heart block is always of serious significance, for it usually denotes widespread myocardial damage. The therapy depends upon the underlying cause. In the Adams-Stokes syndrome, atropine, ephedrine, or barium chloride may be satisfactory prophylactic measures, but in the attack epinephrine may be necessary to restore the irritability of the auriculo-ventricular node.

A rapid irregular cardiac mechanism usually means auricular fibrillation, particularly if the irregularity persists as the heart rate rises to 140. An irregular rhythm caused by premature contractions will usually disappear on increasing the heart rate, and will return as the rate falls. Also to be considered, however, are disturbances due to a shifting degree of auriculo-ventricular block in auricu-

lar flutter, which has been mentioned as a cause of an irregular regularity; and intermittent, brief paroxysms of tachycardia.

Auricular fibrillation is perhaps the third most common of the cardiac arrhythmias, premature contractions and paroxysmal auricular tachycardia ranking first and second. It is an absolute irregularity of the heart beat, and is believed to be due to a wave of excitation and contraction, circulating in a ring-shaped course in the auricles about the great veins, stimulating the remainder of the auricular muscles and the ventricles. It is closely related to auricular flutter, but in that condition the auricles contract at a rate of about 300 and the ventricular response is regular; whereas in fibrillation the auricular wave travels at a speed of 400-600 a minute, averaging about 500, and the ventricles respond as often as they can, and in an irregular manner. Auricular fibrillation is not necessarily a permanent condition; it may be paroxysmal in type, although the persistent type is certainly more common. It is almost always accompanied by serious heart involvement; rheumatic mitral disease, thyrotoxicosis, hypertension, and coronary artery disease being most frequently associated with the condition. Even though the appearance of auricular fibrillation in a case of heart disease is a serious omen, and may lead to cardiac failure or embolic phenomena, it must be remembered that it is the tachycardia, and not the irregularity, that increases the burden on the heart, and that with appropriate therapy a comfortable existence may be maintained for many years. Treatment must be selected to meet the requirements of the individual case. In fibrillation which is the result of thyrotoxicosis, for example, the thyroid disorder must be treated and controlled in order to create any appreciable effect upon the arrhythmia. Drug therapy is limited essentially to digitalis and quinidine. Digitalis may act in several ways in auricular fibrillation. It is generally agreed that digitalis slows the ventricular rate by causing an increase in the grade of auriculo-ventricular block, so that fewer effective impulses reach the ventricular muscle. Because of the longer periods of ventricular diastole, with consequent more complete filling of the ventricles, the stroke volume and cardiac efficiency are increased. The effect of digitalis on the auricles may vary; for instance, it may, by increasing the refractory period of auricular muscle, cause intra-auricular block, thus tending to break the circus movement; but usually it shortens the refractory period, this increasing the auricular rate and aggravating the auricular irregularity. Quinidine sulfate increases the refractory period of auricular muscle, thus slowing the circus movement, and if the drug effect is enough to produce marked lengthening of the refractory period, the abnormal mechanism may cease suddenly. If at such time the sino-auricular and auriculo-ventricular nodes are too depressed for either to assume the role of pacemaker, sudden death will result, but this, fortunately, is a rare event. It is known that fatal embolic accidents have followed restoration of normal rhythm through the use of quinidine, and it generally is considered unwise to attempt quinidine therapy in a patient who has had previous embolisms. For this reason, also, it may be dangerous to use quinidine in any case of fibrillation of more than a month's duration, for during that length of time intracardiac thrombi, particularly in the auricular appendages, may have developed. Again, if the fibrillating patient is in congestive heart failure, restoration of compensation through rest and digitalization must be accomplished before quinidine can be employed. And, finally, it has been stated that the use of quinidine in a patient who has had long-standing mitral stenosis is of little value, simply because such patients are not likely to respond to this form of treatment.

Premature contractions, of little clinical significance, are the most common of all cardiac irregularities, and are due to abnormal stimuli arising in various portions of the heart, the auricles, ventricles, the auriculo-ventricular bundle, or the nodes. If the abnormal impulse arises in auricular muscle, it spreads downward to the auriculo-ventricular node, causing a ventricular response, and upward to the sino-auricular node, releasing in impulse in the process of development, thus disturbing the normal rhythm. Premature contractions are of no real clinical importance except in three respects: 1. They may cause discomfort and palpitation and are often a source of worry to the patient; 2. they occur relatively more frequently in persons who have organic heart disease; 3. they may be directly due to over-dosage of digitalis or indulgence in tobacco or alcohol, elimination of which will relieve the arrhythmia. Therapy should consist in reassurance, unless the discomfort is sufficient to

cause real fear. Then sedation may be attempted, and, if necessary, quinidine and digitalis, although the latter are not advised.

A slow, irregular rhythm of the heart may be simply a sinus bradycardia interrupted by premature beats or a sinus arrhythmia, but more important, may be a digitalized fibrillation or a partial heart block.

Sinus arrhythmia is an irregularity due to rhythmical alternating periods of slowing down and speeding up of the heart rate, as the result of fluctuations in vagus tone, and the concomitant effect upon the rate of impulse formation. In this condition, essentially a benign one, with each deep inspiration, the vagus tone decreases and the heart rate increases; and during expiration the vagal depressing influence becomes enhanced and the heart rate slows. At times, a single long diastolic pause occurs without phases of quickening, and this may be a sino-auricular stand-still or sino-auricular block. Sinus arrhythmia can usually be diagnosed clinically, for with slow, deep inspirations and expirations, the irregularity is exaggerated; but when the heart rate rises above 100, as the result of exercise, atropine, or amyl nitrate, the irregularity disappears. When seen in young individuals, sinus arrhythmia is of no real import and requires no therapy; when it appears in elderly people it may be significant of underlying pathology, and therapy must be guided by the clinical picture.

Much more serious than the condition just mentioned is that of heart block, a term which implies that there is interference in the spread of the excitatory process through some portion of the conduction system. Heart block is almost always indicative of widespread heart disease, for it is unlikely that pathological changes would occur in the conduction pathway without involvement of the remainder of the heart. Delayed conduction time, partial and complete heart block are the usual forms of clinically recognizable heart block. The last has already been mentioned. A defective auriculo-ventricular conduction implies merely that the conduction time between the auricles and ventricles is prolonged beyond the accepted 0.20 second, but each auricular contraction is still followed in regular sequence by a ventricular systole. It is unusual, however, for the auriculo-ventricular conduction interval to extend beyond 0.30 second without an occasional dropped beat, or failure of ventricular response. In higher grades of auriculo-ventricular block, various rhythms may be established: thus, if there are only 3 ventricular responses to every 4 auricular beats, a 4:3 block is said to exist. If only every other impulse reaches the ventricles, a 2:1 block is present, etc. The diagnosis of heart block often must depend upon electrocardiographic records, for this method of study is the most definite way we have in dealing with all cardiac arrhythmias. The prognosis in heart block depends essentially upon the pathology causing the conduction disturbance, and therapy, also, must be directed against the etiological agent.

Wainwright Building.

CONSERVATIVE OBSTETRICS*

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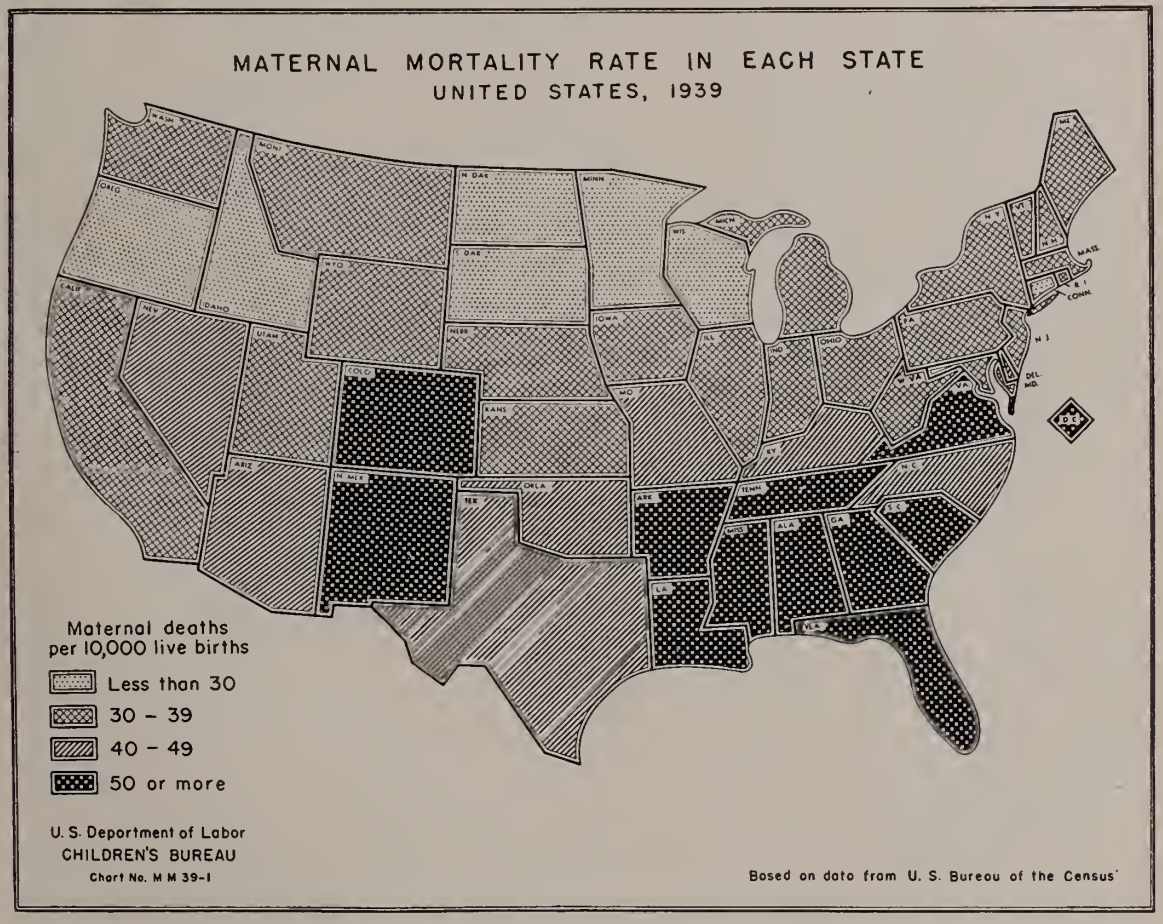
At no time in the history of the world has conservative obstetrics been more needed than right now. For the purposes of this paper I have adopted the first definition of the word "conservative" as given in the Oxford Dictionary, i. e., "1. Characterized by a tendency to preserve or keep intact or unchanged." The other definitions have to do with politics and mean the opposite of progressive. As measures of the conservativeness of the kind of obstetrics that is practiced we have maternal morbidity and mortality rates and fetal morbidity and mortality rates, as well as the results of our postpartum examinations. The maternal mortality and fetal mortality rates lend themselves readily to statistical study and can be applied in a state or nation-wide manner. The maternal morbidity statistics are more applicable to the study of results in hospitals where more detailed records are kept. The definition of "morbidity" varies with different localities and should be defined in each study. Fetal morbidity as applied to obstetrics has not been used as far as I am aware. Fetal mortality rates, while statistically accurate, do not give the entire picture. Some of the fetal survivals are much worse than

*Read before the Post-Graduate Course in Medicine, Duke University Medical School, Durham, N. C., January 14, 1942.

death itself. In a practice of nearly forty years, I can recall four such cases which stand out in my memory like sore thumbs. Postpartum examination is a more personal matter and the personal equation enters so largely in the estimate of the results obtained that it is not greatly used for comparison. However, it is the acid test that each obstetrician should apply to his own work. The importance of this test is not generally recognized by the public, and it is sometimes difficult to get the patient back for the postpartum visit.

then all-time low of 2.5 maternal deaths per 1000 live births. The next year North Dakota had the lowest maternal death rate (2.4) and now Idaho holds the honor with a rate of 2.2. This is very close indeed to the ideal rate that Louis Dublin proposed a number of years ago. Dublin, who is the statistician for the Metropolitan Life Insurance Company, was also a director of the New York Maternity Center, one of the early agencies to become interested in maternal welfare. This association, by concentrating on good prenatal care, was


MATERNAL MORTALITY RATE IN EACH STATE
UNITED STATES, 1939
Maternal deaths per 10,000 live births
Less than 30
30 – 39
40 – 49
50 or more
U. S. Department of Labor
CHILDREN'S BUREAU
Chart No. M M 39-1
Based on data from U. S. Bureau of the Census

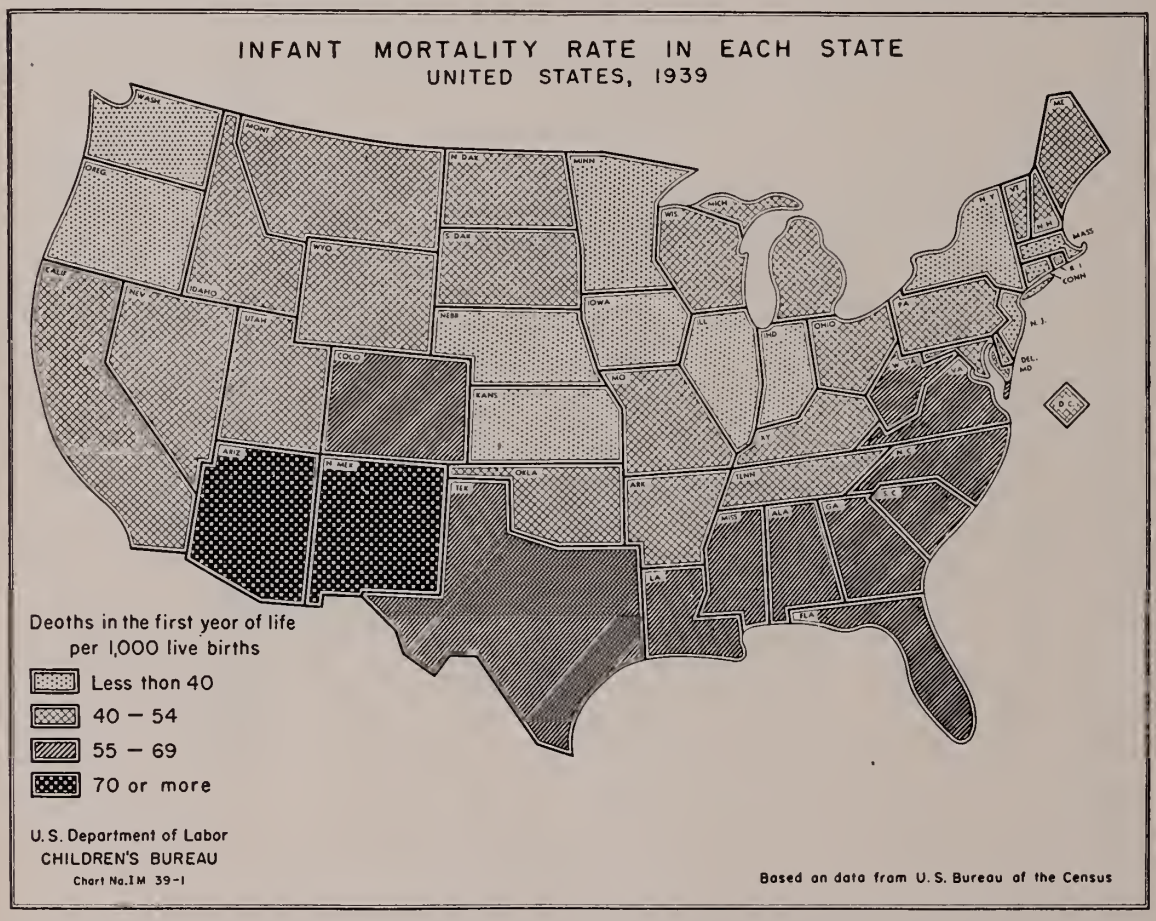
I propose to treat my subject first as a state-wide problem and then as an indvidual one. The accompanying charts compiled by the Children's Bureau show the maternal and infant mortality in the United States for 1939. The infant mortality is that for infants under one year of age, but, since 58% of these deaths are due to pre-natal and natal causes, the chart serves our purpose fairly well. The states that interest us particularly are those in the low group. In 1937 Connecticut reached the

able to reduce maternal mortality 66%, stillbirths 42% and infant deaths in the first month 32%, when compared with similar districts in New York City without the benefits of the Maternity Center supervision. Under the enthusiasm of this beginning, Dublin said that not more than one mother in 500 should lose her life having a baby. Yet, in 1936, he was pessimistic about any large group attaining such a figure.

Connecticut, the first state to show a marked im-

provement in maternal mortality, still ranks near the top. Furthermore, she has an enviable record as to infant mortality. It would be interesting to know what Connecticut did to get such results. Dr. James Ragland Miller, the chairman of the maternal welfare work in Connecticut, says, "Many factors have been at work which might have influenced these rates for the good. There has been a great increase in hospital facilities, blood transfusions, etc. There has been rapid education of the public to the most powerful factor which was brought to bear at this very time is the awakening of a spirit of self-criticism on the part of the profession itself; reviewing its failures and learning from its mistakes."

In commenting on the low maternal death rate for North Dakota, the chairman of the North Dakota Committee on Maternal and Child Welfare, Dr. John H. Moore, stresses the educational program that was carried on among the doctors. He says,


INFANT MORTALITY RATE IN EACH STATE
UNITED STATES, 1939
Deaths in the first year of life per 1,000 live births
Less than 40
40 — 54
55 — 69
70 or more
U.S. Department of Labor
CHILDREN'S BUREAU
Chart No. IM 39-1
Based on data from U.S. Bureau of the Census

the necessity of early and persistent prenatal care. It is to be hoped that some good was done by the post-graduate refresher courses in obstetrics. No one can estimate the extent to which birth control has played a part in this result, preventing the recurrence of pregnancies which might have proven fatal. Some physicians feel that practical application of birth control measures in this state has been so widespread as to constitute a real contribution to lowering the death rate in childbirth. These and many other reasons can be given but in our opinion "The problem of maintaining this low rate or even of lowering it still further is our problem as private practitioners. I believe that the private physician in North Dakota is assuming the leadership in maternal care that is rightfully his and the response that the physicians of this state have given our Committee on Maternal and Child Welfare in its attempts to further your educational program is most heartening.

"To date there have been three stages to the educational program since the maternal and child welfare

committee was first appointed by the North Dakota State Medical Association in 1935. The first consisted of talks on obstetric subjects given by members of the committee before the component district medical societies of the North Dakota State Medical Association. These talks stressed the importance of the fatal triad—infections, toxemia and hemorrhage. The second stage consisted of the presentation of lectures on obstetric and pediatric subjects by visiting clinicians at various centers throughout the state. In a representative year, 1939, one hundred and ninety-eight physicians registered for these courses in the ten cities in which they were given. The clinicians, selected by a subcommittee of the maternal and child welfare committee, were chosen because of their teaching ability and their familiarity with clinical obstetrics and pediatrics, and in each instance the choice was a most happy one. The program is now in its third stage, which consists of post-graduate courses in obstetrics and pediatrics for North Dakota physicians at the Center for Continuation Study at the University of Minnesota. The last of these courses, given in November, 1940, brought the North Dakota registrations to sixty-three."

I have not seen a report on how Idaho came to be a leader, but we see from the two reports from states that were leaders and are still in the top group that education is considered the most important part of their program. In one, a new state where there are no midwives, they educate the doctors, and in the other, one of the original thirteen, they educate the public and the doctors educate themselves by rigid self-criticism. The result was practically the same.

In Virginia we have concentrated upon the establishment of maternal centers throughout the state with the idea not only of making available prenatal care especially in the rural districts, but also with the hope that the clinics might stimulate interest among the doctors and educate the public. This brings up the problem that McCord so graphically described in his presidential address before the American Association of Obstetricians, Gynecologists and Abdomnial Surgeons, namely, the poverty of the South. At the end of his address one of my Northern friends asked me if it were as bad as that and I had to reply that every word of it was so, but that we did not like to brag about it. The people of the South have gotten so used to being poor and of not being able to afford anything that they think they cannot afford good maternal care. With the cooperation of the State Board of Health and the local medical groups we have succeeded in establishing and running 99 clinics, but there are some 50 counties with no clinics.

We have also started on a program of self-criticism for which Miller commended the Connecticut doctors. Every maternal death in the state is reviewed by the members of the Maternal Health Committee of the Medical Society of Virginia. Each member individually reviews the histories that are obtained by field medical workers from the State Health Department, and the cases are then discussed in the meetings of the committee. We have had a lot of surprises, not the least of which is what is considered a maternal death. If a woman is pregnant and dies from any cause whatever, it is a maternal death. She may have pneumonia and if she aborts, or even if she does not abort, her death is counted as a maternal death. One of our cases was that of meningococcic meningitis with spontaneous abortion at six months. Another was a patient with an ectopic pregnancy who was operated upon and recovered. She came back to the hospital six weeks later with a pelvic abscess and was operated upon again and died. She was classfied as a maternal death. Another patient died without a diagnosis and, because one of the "in-laws" said that she thought she had had an abortion performed, it was charged to obstetrics. There was no evidence whatever that the patient had been pregnant. Thirteen per cent of our so-called maternal deaths fall into such doubtful categories.

Another one of our surprises had been the number of deaths from toxemia. In the statistics we are accustomed to seeing, sepsis takes the lead. In Virginia there are more deaths from toxemia than from sepsis even if we count all the postabortal deaths and those from phlebitis. You know and I know that these are entirely preventable. Most of our patients dying from this cause have had no prenatal care. When the doctor first sees them either in convulsions or in coma the treatment is often bizarre. Of course, it must be emphasized that the committee hears of only the badly treated patients, and that for every one that comes under our scrutiny, there are perhaps twenty who have received the best of attention. As I look back in my mind over the cases of toxemias that I have reviewed, it seems to me

that the treatment reflects either an utter indifference on the one hand or an ill-advised activity on the other. One doctor found a patient in convulsions. He gave her twenty grains of sulfanilamide and left directions for her to have more, and was surprised the next morning to find the patient dead. The patient had a very definite contraindication for sulfanilamide in the liver damage that she presumably had and no indication whatever for the drug. It is much like the old custom of using chloroform in eclampsia, except there was some reason for the chloroform. It stopped the fits even it it did cause the same sort of liver damage that the disease did.

Another *faux pas* in the toxemia cases is the over use of intravenous fluids. To cite probably an extreme example, a 44-year old multipara was sent into a hospital because of toxemia with a blood pressure of 190/120, edema and dyspnœa. She was aborted by rupturing the membrances and left the hospital in a few days. A month later she returned in "shock," cyanosed and edematous, with a systolic pressure of 100 m. of Hg. She was given intravenous fluids and was dead in an hour and a half.

The errors in the sepsis group are not so glaring. Breaks in technic do not show on the histories such as we are considering. However, there is one error of judgment that is common in the Virginia histories, as well as in every other survey of this sort, and that is the frequency of a second invasion of the uterus, especially in abortions. In the Philadelphia study it was emphasized that an uterus could stand one invasion fairly well but a second invasion a day or two later spelled disaster. Apparently enough emphasis has not been given to this observation.

The hemorrhage group constitute our third largest group. Apparently antepartum hemorrhage has not been taken seriously enough. Many of the histories recount spells of bleeding for as long as a month. Instead of the first hemorrhage being a signal for a careful investigation to determine the cause, the patient is neglected until she is in extremis. At this point I want to enter my protest against packing a patient before she is sent to the hospital. In antepartum bleeding such packing does not stop the bleeding and all too frequently causes serious and even fatal infection. If I were a woman with a placenta previa, I would take my chance with a dose of morphine rather than an emergency packing of the vagina as a preparation for the trip to the hospital.

Postpartum hemorrhage still takes a considerable toll of Virginia mothers. I am sorry to say that accouchment forcé is still practiced although the high forceps operation has become obselete. But enough of this gloomy picture; you asked me to talk upon conservative obstetrics.

In the first place I want to emphasize that good obstetrics can be done anywhere. It is easier, of course, in a well equipped hospital but if anyone thinks that a hospital is essential, let him read the reports of the Frontier Nursing Service. Two things are necessary, a zealous obstetrician and a cooperative patient. It is hard to say which is the more important. Even the enthusiasm, skill and zeal of the Frontier nurses does not compensate for lack of cooperation on the part of the patient who does not take advantage of available attention. There is a marked difference in the results obtained in the group of women who avail themselves of supervision early in pregnancy and those who wait until the end of pregnancy.

The first requisite for conservative obstetrics is good prenatal care. All too frequently the patient does not consult her doctor until she is five or six months pregnant. This is in time to prevent most of the toxemias. However, if the supervision of the patient is begun as soon as she becomes pregnant, one has a better opportunity of correcting any abnormal conditions that may be found at the first examination. This is particularly true of the patient who has a latent syphilitic infection. It is hardly necessary in this day and time to stress the importance of a routine Wassermann test. Since 1915 I have had a routine Wassermann test done upon all my patients. In my private work I get a positive report about once in 300 cases, which means that I get a positive report about once a year. The ten or twelve good babies that otherwise would have been lost more than pay me for my trouble. But, even if I never got a positive report, it is a great comfort to know that you are not dealing with a syphilitic.

There is another phase of early prenatal care that seems to me to be important. The deaths from abortions constitute approximately one-fourth of the total maternal deaths year after year. This age-old problem continues in spite of the efforts of church and state. Until now the doctors have not had a chance because they do not see these patients early enough. The shock of finding oneself pregnant un-

balances many women. Like the early hyperemesis, the condition rights itself if the patient can be tided over the first few weeks. Preaching to the patient or threatening her does no good but if her doctor discusses the medical aspects of abortion with her frankly and explains relative risks of infection and hemorrhage it may do good. If recounting the immediate risks does not seem to impress the patient, I tell her about the Russian experience where abortions were done legally and expertly in specialized hospitals, yet the late gynecological complications were so numerous that the practice was abandoned. Such treatment requires time and patience but is well worth while.

The prophylactic treatment of toxemia was greatly simplified when de Snoo introduced the salt-free diet into this country several years ago. He made the statement that he had never seen a patient have convulsions who had been on a salt-free diet for as long as twenty-four hours. He recommended a test for the urine which would prove whether the patient were adhering strictly to the diet. Practically, that is not necessary as the systolic blood pressure will tell you the same thing. With private patients it is easy enough to use a salt-free diet, but clinic patients frequently cannot be made to understand. Often it is simpler and easier to put them on a strict milk diet until the blood pressure becomes normal. I realize, of course, that milk contains some salt, but such a regime usually works. If it does not, the patient should be put in the hospital for observation. If the patient does not improve, and especially if there is a nitrogen retention, the pregnancy should be terminated. Those who have a bent for operating prefer to do an hysterotomy and, as an additional argument, claim that sterilization can be done at the same time. However, simply rupturing the membranes works very satisfactorily. If sterilization be desirable, it can be done more safely at a later date.

This is as good a place as any to say a word about the treatment of eclampsia. Eclampsia usually means that there has been no prenatal care, but exceptionally it occurs in spite of the best of supervision. Whether it is antepartum, intrapartum or postpartum the treatment is the same. There are just four things to do: (1) stop the convulsions, (2) prevent pulmonary edema, (3) promote kidney activity, and (4) conserve the patient's strength. Before we had effective means of stopping the convulsions, treatment of eclampsia was indeed an arduous undertaking. I have literally spent a week treating a single patient. The advent of the intravenous use of magnesium sulphate greatly simplified matters. With it convlusions can be stopped in the great majority of cases. The few that resist can be controlled by sodium amytal. Digitalis is a preventative of pulmonary edema and may even cure it once it is established. Water by way of the gastro-intestinal tract should be given in adequate quantity. When given in this way there is no danger of water-logging the patient nor of over-distending the right side of the heart. In the presence of a threatened anuria glucose should be given intravenously. If there is edema a small quantity of a 50% solution is better than a large quantity of, say, a 10% solution. If, however, there has been loss of fluids, the weaker solution is preferable. Bright lights, noise, gastric lavage and enemas are to be avoided. With such a plan I have treated 142 consecutive patients with eclampsia, with 6 maternal deaths. I was quite proud of my record until June a year ago when Bryant, of Cincinnati, reported a series of about the same size with only two maternal deaths. The essential difference between his treatment and the one that I have just outlined is that he stopped the convulsions with veratrum viride, the size and frequency of the dose being regulated by the blood pressure. We have treated one patient with veratrum viride and were very favorably impressed. Some of you older men will probably say that we used to use Norwood's tincture of veratrum viride and gave it up because it was too dangerous. That was when you had only the patient's pulse to guide you in the dosage. The blood pressure seems to be a more sensitive and a more reliable guide.

Finally, under prenatal care I wish to discuss the question of diet for patients with moderately contracted pelves or with the history of dystocia. A great many authorities say that there is nothing to it and prove their point by theoretical arguments. From a practical point I know it is worthwhile. For a number of years I have been in the habit of putting patients with contracted pelves and those with a history of difficult labors on a Prochownick diet for the last six weeks of their pregnancy. It has reduced the major obstetrical operations and has made their labors easier. Just how it accomplishes this, I do not know, but I am under the impression

that labor starts a little earlier than would be the case had the diet not been used and that the cervix dilates with less pain. Professor Reeb, of Strassburg, found this to be true also where salt is left out of the diet. Some day someone will find out how diet affects uterine contractions and then we will have diets for easy labor just as we now have diets for obesity.

DELIVERY CARE

The essential of conservative delivery care is surgical cleanliness. In addition one should conserve the patient's resistence and avoid traumatized tissue. How this is to be accomplished depends on the patient's surroundings and the skill and training of the obstetrician. Aldridge has shown that at the Woman's Hospital, of New York, the best results for both mother and child were in the group delivered by low forceps after an episiotomy had been done. This does not mean to say that all patients should be delivered in this manner. Some never reach the stage where such an operation could be done. If I were delivering my patients in the home I would most assuredly have more spontaneous deliveries. On the other hand, a long unaided delivery carries more danger than interference after the head is completely out of the cervix.

When we discuss those cases in which progress is arrested we are on more debatable ground. We have dystocia due to disproportion between the fetus and the pelvis, and dystocia due to anomalies of the soft parts. With the former, x-ray promises a great help. In some clinics with a lot of experience with x-ray pelvimetry and fetometry, the prediction as to the outcome is very exact. However, my observation leads me to believe that the casual x-ray examination is more often misleading than otherwise. I had much rather rely upon the engagement or non-engagement and whether the presenting part can be made to engage (Müller maneuver) than upon the opinion of an x-ray man who only occasionally examines the pelvis for an obstetrical opinion.

In private practice one rarely encounters serious difficulty from contracted pelvis. The dystocia that bothers me most frequently is that due to constriction rings. I find that there is a lot of confusion between a retraction ring and a constriction ring. A retraction ring, or Bandl's ring, is the line of demarcation between the lower uterine segment and the upper active part of the uterus when the presenting part meets an obstruction. If the proper treatment is not instituted this ring continues to ascend and the lower uterine segment becomes more attenuated until finally rupture takes place. A constriction, or contraction ring, on the other hand, is a band of contracted uterine fibres that forms about a sulcus, usually the neck, of the fetus so that the fetus and uterus is "frozen" into a single mass. The ring does not rise nor does the lower uterine segment stretch. It simply freezes on to the baby so that the baby can neither descend nor rotate without carrying the uterus with it. In my experience it is often associated with occipito-posterior positions. It may occur at any time in the first or second stage, but most frequently when the cervix is nearly fully dilated. When well-established, the ring resists even the deepest sort of anesthesia. Rudolph says that most of them are reversible and that if the patient is put to sleep with morphine, the ring will disappear. I believe he is right. In two cases in which I tried this treatment the ring disappeared in some six or eight hours and an easy delivery was accomplished. However, both babies were stillborn. Nevertheless, it is a great comfort to know that the ring is reversible.

If the cervix is about fully dilated the constriction can be relaxed by giving the patient one-half cc. of adrenalin hypodermically and the patient can be delivered either with forceps or by version and extraction, whichever seems to be the easier. If the constriction makes its appearance before this stage is reached, Rudolph's method is undoubtedly the one to follow.

Dystocia due to a rigid cervix is talked about a lot, much oftener than the frequency of the condition warrants. Whenever this subject is brought up for discussion, a patient whom I saw a number of years ago stands out vividly in my memory. This patient had her cervix destroyed by a "*cancer paste*". What the original condition was, I do not know. What I do know is that the entire vaginal vault was a mass of scar tissue. In the center of this scar tissue was a tiny dimple which I took to be the opening of the cervix. I did not see how such a cervix could possibly dilate and unhesitatingly advised a Cesarean section. Much to everybody's surprise, the patient went into a labor a little prematurely and the doctor scarcely had time to get to her before she delivered. Some time after this I saw another patient in consultation. She was in

her forties and had had an amputation of the cervix. What was left of the cervix was said to be full of scar tissue. This patient's membranes ruptured prematurely. After eighteen hours of hard pains, the patient had a chill and her temperature rose to 103. The cervix showed no signs of dilating. Naturally her doctor was greatly concerned for the patient. I suggested that the patient be given a dose of morphine and that the doctor go home and go to sleep and that if the patient delivered in bed before he could be called, not to scold the nurse. The next morning the doctor greeted me with a grin and wanted to know how I knew that the patient would do that way. The doctors of the last century used to write a great deal about the rigid unyielding cervix. Benjamin Rush was convinced that bleeding was a specific for this condition. So vivid are his case reports that I have been tempted to try it. Of course, I would not throw the blood away, but would add it to the blood bank in case the patient did not need it again. Incision of the rigid cervix, the so-called Dührrsen's incisions, were first described by a fellow townsman just one hundred years ago. It used to go by the name of Patterson's operation. A sense of loyalty would prompt me to extol this operation, but truth compels me to testify that it is rarely necessary.

Cesarean Section

This extremely useful operation is at present being greatly over-worked. Except for disproportion there are no maternal indications for the operation. When the baby is in good condition it is indicated in ablatio placentæ when a prompt delivery from below cannot be effected. The same is true for an elderly primipara with placenta previa. In any case, I wish to make a plea for an obstetrical consultation before the operation is done.

Blood Transfusion

Blood transfusion has been a great boon to emergency obstetrics, especially in ruptured ectopics, placenta previas, ablatio placentæ and postpartum hemorrhages. In this connection I would like to recommend blood plasma which is a good North Carolina invention. It fits nicely in the picture of home obstetrics because it requires no matching and, therefore, it can be given more promptly. Even in hospital obstetrics it is useful in tiding over the patient until a suitable donor can be found. The dried plasma keeps indefinitely and, therefore, can be and should be in every obstetrical kit.

Anesthesia

Finally, we come to the much vexed question of pain relief. Every doctor has his own pet plan, which in itself is good evidence that there is no perfect plan. Many should be used only in hospitals. One should always bear in mind that one is anesthetizing two persons one of whom is shut off from all means of observation except the fetal heart sounds. It should also be borne in mind that the baby's respiratory center is probably more sensitive to all anesthetic drugs than that of the mother. Anesthetics that depend upon or are accompanied by any degree of anoxemia should be avoided if possible. Toxic patients stand inhalation anesthesia poorly. Among the many useful technics, I wish to recommend two because of their universal applicability; (1) ether-oil rectal instillation, and (2) local infiltration and perineal nerve bloc with procaine. The formula that I use for rectal instillation is the No. 2 formula of Gwathmey's original communication, i. e., ℥iiiss of ether, ℥iss of either olive or mineral oil, and 10 grains of quinine dissolved in alcohol ℥ii. The effect of this lasts about three and one-half hours and it can be repeated as necessary. Its chief drawback is that a little knack in giving it is required which some nurses never acquire. The local anesthesia requires 40 cc. of 1% procaine into which is dropped 5 minims of adrenalin, a 10 cc. syringe and a needle 12 or 13 cm. in length. Ten cc. of the solution is deposited in the region of the perineal nerve on either side as it courses around the ischial spine. The balance is injected into the perineum, especially in the line of the episiotomy, if that is planned. I use this technic routinely if I am going to perform an episiotomy, even if a general anesthetic is used for the delivery. The general anesthetic can be stopped when the head comes in view. The adrenalin lessens the bleeding from the incision and the perineorrhaphy can be performed leisurely without prolonging the anesthesia. If there is any reason, such as an upper respiratory infection or a toxemia, the general anesthetic is left off and I get along almost as well, especially if the operation is planned so that the action of the Gwathmey is at its height.

In conclusion, I would like to stress the importance of studying your patient as early in pregnancy as

possible, of supervising the course of her pregnancy and of planning the delivery so as to avoid shock, hemorrhage and infection. If you will do this there will be few disconcerting surprises. There will be some emergencies in the way of premature labors and antepartum hemorrhages which you will promptly meet, because you will recognize them early.

Medical Arts Building.

EXTRAMAMMARY BREAST CARCINOMA*

JULIAN L. RAWLS, M.D.,
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Mrs. P. W., white, married, age 36 years. First seen by the writer on January 24, 1941; referred by her obstetrician because of a hard, small, freely movable tumor, very superficial, between the upper and outer margin of the left breast and the axilla. There were small, hard, palpable nodules in both axillae. All had been present for some time. She was then seven months pregnant and there had been no very appreciable increase in size during her pregnancy. She had been operated on September, 1939, for a parathyroid tumor. At that time she had a blood calcium of 15. and was told that an x-ray plate showed calcified glands in her mediastinum. There was no palpable mass in either breast. It was thought that these were calcareous deposits, remnants of her parathyroidism, and she was advised to leave them alone until after her delivery. She was delivered about the middle of March, six weeks after I first saw her. There had been some increase in size of the nodule above the breast. After she left the hospital this nodule was removed in the office and a biopsy showed adenocarcinoma of probably extopic breast tissue. She was given 900 "r", to each of four portals, a total of 3600 "r", between April 14th and 26th and on April 30th a radical breast amputation was done.

At the time the x-ray was done a picture of her chest showed: Fibrocalcific deposits in the hilar regions of both lungs which were taken to indicate old healed pulmonary tuberculosis. As no residual malignancy was found her x-ray treatments were discontinued after the amputation of her breast.

LABORATORY REPORT†

April 11, 1941, Out-Patient

Synopsis of Case: Nodule in region of axillary fold, outside of breast.

Specimen consists of: Lesion of chest wall. This is a hard nodule which measures 15 mm. in diameter. It is white and non-encapsulated. The lesion is surrounded by fat, connecting tissue and some muscle.

Microscopic Examination: Tumor. The tumor consists of atypical acini, alveoli and islands of epithelium which are surrounded by fibrous tissue. The acini and alveoli are lined by one or more layers of columnar epithelium. The islands consist of large polyhedral cells with poorly defined boundaries. The nuclei are large and hyperchromatic. Mitoses are fairly numerous in some areas. Along one margin of the section there are groups of acini which closely resembly those of a normal lactating breast.

Laboratory Diagnosis: Adenocarcinoma (scirrhous variety) of ectopic breast tissue.

PATHOLOGY REPORT

April 30, 1941

Carcinomatous nodule removed from region of axillary fold a few weeks ago. This was followed by x-ray treatments.

Specimen consists of: Left breast and pectoral muscles. The breast is hypertrophied and it contains milk. There is a small cavity in the upper lateral quadrant where the tumor has been removed. This cavity is adjacent to some glandular tissue so that the cancer could have been in the breast proper. There are two axillary lymphnodes which are moderately enlarged.

Microscopic Examination: Breast. The section was made from the previous operative wound. The latter is lined with fibrin which is undergoing organization. The granulation tissue contains a moderate infiltration of neutrophiles and lymphocytes. A section from the adjoining glandular tissue contains a focal infiltration of round cells.

Lymphnode: A section was made from the only

*Read before the Seaboard Medical Association of Virginia and North Carolina at its annual meeting at Virginia Beach, December 2-4, 1941.

†Laboratory and Pathology reports made by Dr. L. J. Motyca.

large lymphnode. It shows hyperplasia of the reticulum and lymphocytes. There is no evidence of malignancy.

Laboratory Diagnosis: Healing surgical wound of the left breast; chronic mastitis; hyperplastic lymphnode of the axilla.

Mrs. J. M. M., married, 60 years old. She has a small, hard lesion of the left chest wall just at the reflection of the skin on the breast on the sternal side. It is exceedingly hard and fixed to the skin and to the fascia beneath it. She is 60 years old and passed her menopause ten years ago. She has had five children and one miscarriage. The breast is atrophied and the nipple is inverted. She says that this condition has existed all of her life and is also present in other members of her family. There are no masses in her breast and no palpable nodes in either axilla. X-ray of her chest was reported "negative". The induration was excised with the skin and the fascia beneath it. The pathological report was: "Scirrhous carcinoma of accessory breast tissue."

The breast was not amputated. She was given ten treatments of 250 "r" each to the left anterior chest by a single portal 8x10 cm.

A. G., colored, married, 42 years of age, was first seen in September, 1938, with a mass about the size of an orange in the lower right axilla. There was no evidence of tumor in the breast. She had first noticed the tumor about three years before. She had had four miscarriages with no full term pregnancies. Her blood Wassermann was negative. The mass was removed and was reported as: "Metastatic adenocarcinoma of the axillary lymphnodes". She was given 8100 "r" by five portals to the breast and supraclavicular region, 1600 "r" to the pelvis.

In April, 1939, she returned with palpable nodes high up in her axilla. At that time a radical breast amputation was done and the axilla cleaned out. The pathological report states "There is no demonstrable tumor in the breast or nipple. The axillary glands showed adenocarcinoma of the scirrhous variety." The x-ray report of her chest states: "The lungs are clear, there is no x-ray indication of metastasis at this time.

After the breast amputation the patient disappeared and was next seen in April, 1940. At that time she had palpable supraclavicular glands and was referred to the x-ray department for further irradiation; however, she failed to keep her appointments and we next saw her in September, 1940, when she had an edema of her right arm, palpable supraclavicular glands and an induration in her axilla. She was given an additional 2000 "r" to the right supraclavicular region and 1800 "r" to the right axillary region. In January, 1941, she was given 1800 "r" to the right supraclavicular and 2000 "r" to the left supraclavicular regions. On February 24, 1941, there were many nodules in the chest wall and a large, hard mass in the upper abdomen and she was sent to her home in North Carolina. That was the last we heard from her, so we presume that she made a rather rapid exit.

We have presented three cases of carcinoma of the type usually found in breast tissue appearing in the region of the breast, but not definitely located in the breast itself. In the two cases in which a complete operation was done no evidence of tumor was found in the breast.

708 Medical Arts Building.

SCHOOL MEDICAL SERVICE

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For the past several years, we have held, twice each year, what we call pre-registration for those entering either the September or February term of school. These are usually held in May for those beginning in September and in December for the February group.

Since the preparation for school entry is one of the objectives of the Parent-Teacher Associations, we have always had the help and approval of these organizations. There are many reasons for preschool registrations, both on the part of the school and that of the parent and the child. Perhaps the most outstanding one has been to have the child seen by the doctor long enough before entering so that defects may be cleared up if found by either doctor or dentist. Then we believe a complete exami-

nation by the physician makes the parent appreciate the value of individualized medical attention, which he, the physician, can best give. Also immunizations and vaccinations can be attended to, if these have not been done.

We have had a very simple blank, which gave us the essential things we wanted to know, and parents were directed to take this to the doctor for a complete examination and return it to the school when the child enters.

Our records for the past few years show that with registrations twice a year, 27.7 per cent of parents return doctors' certificates filled out. Although this is not a very large number, it nevertheless shows a good increase each year and I believe will improve as more stress is laid upon it by school health workers and more and better examinations are made by the doctors, at which time the child's complete routine is discussed and careful explanations are made to both mother and child. It is my belief that we very often leave off the simpler things, which in the end count for so much.

ADVICE TO PARENTS

At the beginning of this past school year, I determined to have all children, who had not returned a blank filled out by a doctor, seen by one of our school physicians with the mother present. I at first thought to undertake this myself but found it was more than one person would have the time to do; consequently, the other members of my staff were called in for a meeting, at which time we discussed the procedures so that all of us would be saying essentially the same thing. Also we determined that the simple things should be discussed, which were in addition to calling the parents attention to any obvious defects: food, rest, play and the care of the teeth.

Our instructions in regard to food were three regular meals a day, at approximately the same time. We laid particular emphasis on eating some of all the foods, saying that it was better for a child to eat a small helping of cereal, small glass of milk or piece of fruit, and some of the other foods usually had at breakfast, "as eggs, sausage or other meats or fish," bread and milk, than for him to fill up entirely on a large bowl of cereal. He was then to come to school and only bring a piece of fruit or have a glass of fruit juice at school, but he was not to have mid-morning sandwiches, cookies, buns, other sweets or milk. Most of these children leave school by 12:30 P. M., so a good lunch is stressed, at which time there is a chance for the various salads, soups, sandwiches, vegetables, milk and its products, following which the child is to take a rest of not over one hour. This was stressed as we found many mothers were saying that their children were going to bed so late at night. They were told to have them out in the sunshine by 2:00 P. M., and if a child wanted something to eat in mid-afternoon that fruit was advisable so that he would come to a good supper at around six o'clock. They were then advised to begin their bath by seven or before and be flat in bed as soon thereafter as possible, so that they would be able to get up in time not to be rushed in the morning. The question arises, what about candy and other sweets? These mothers were all advised to purchase a good grade of candy and to see that the child gets it after he has eaten some of all the usual foods and at meal time. Just how well this is carried out will depend upon the intelligence of the mother and how much encouragement she gets from friends and especially from her physician.

THE TEETH

It is astonishing how many mothers do not seem to have any conception of the value of the first teeth. We explain that good teeth are dependent upon the proper food in sufficient quantities and that all of the first teeth should be cared for until they naturally drop out, and we stress going to the dentist at two or two and one-half years before anything is needed so that the child will get used to the dentist and he can advise diet and cleanliness as well as detect any early defects. I am sure all of you will agree after having seen so many dental cripples that this is a very important item. There are so many who cannot pay that I am hoping some day we may be able to say to rich and poor alike, not only that your child needs to see the dentist but that there will be a way whereby all can get this service.

TIME SPENT

We have spent several hours at this type of work and naturally we are hoping it will produce results. Our average time with each child and mother is ten to fifteen minutes. We have already some interesting results as it is more impressive when we can point out what we actually see rather than just to send a note home. They are much more willing to

go to the doctor who, as you all know, we feel should be the final authority.

COMPULSORY VACCINATION

It was in September, 1941, we began enforcing the rule that all children must be vaccinated for smallpox before entering school. If a child came unvaccinated, he was sent home with instructions to be vaccinated before returning. This was carried out with few exceptions, these being only on a doctor's certificate. So far as I am aware, there is no child who has not been vaccinated. Some may not have had a take, but will be required to be revaccinated at the beginning of next term. When there has been a successful take, the upper right hand corner of the school medical card is clipped off so that a nurse can see at a glance those who have not been successful. We have occasionally had doctors to call us or write a note stating that the child has been vaccinated three or four times without a take and they therefore think he is immune. The Public Health Service says, "Unless a person has had smallpox or a successful vaccination it is unsafe to state that he is immune".

There are a few things I want to call attention to, which it seems are so simple that all of us would be willing to follow. First, let me tell you of the various types of vaccination I have noted in the past few months. I have seen them on practically all parts of the body, all over the legs, between shoulder blades, underneath the arm, on the point of the buttock, under the breast, and on the abdomen to the left and about midway between the umbillicus and the crest of the ilium. There is another type I call attention to for the purpose of condemning it —that of the linear scratches. I have seen several with three of these, at least one inch long. When the take was had there was a very large split sore. Don't vaccinate this way, please. So far as protection is concerned, any part of the body will give that but remember that there are times when one has to show evidence of vaccination, when changing schools, applying for certain positions and when traveling abroad. Imagine the trouble and, with some, embarrassment to be had when showing the scar is required. The Public Health Service recommends only on the arm at the point of insertion of the deltoid muscle. I am sure all of you, after seeing them on other parts of the body, will admit this is the best place. May I suggest that the arm be the site of vaccination and the multiple pressure method be the type used. Most doctors are familiar with this method and most health officers use it. To any one who is not familiar, the Health Department or any of us will be glad to explain. May I further suggest that no dressing or shield of any kind be used. The only bad arms I have noted in the past years have been the ones where shields or other type of dressing was used. It is to be noted that plain adhesive after staying on for three or four days makes the skin tender enough for autogenous infection from any serum exuding from the vaccination causing the large sore around the site.

It is the aim of the school Medical Department to try to get into the hands of the doctors as many of these examinations and treatments as we can and I am only bringing these things up to show how critical the layman may be when he sees such marked differences for the same type of work. Believe it or not, many people take their children to certain clinics because they are not satisfied by the way the doctor vaccinates, nor are they pleased when they take a child to their doctor and he only looks casually at the child and says, "He's all right, just send him on to school", instead of giving him or her a complete physical examination. It is my belief that unless the practicing physician takes seriously the routine examination and health guidance of his patients they are likely to fall into the hands of the various cults who extend unscientific and misguided advice and sympathy freely. We want the practicing physician to do these things, as they are all forms of treatment. We have always striven to help make better the relationship of patient and doctor, and when it comes to the point that I in any way have to undermine the physician, I hope that I can find another type of work to do. There is a place for us all, but only when we see each other in the light of ethical practice of Public Health, as well as that of general medicine, will we be able to better cooperate and understand.

What I have tried to say has no particular physician or group of physicians in mind; it is merely an attempt to pass on to my colleagues some of the things which will help us all so that there will be a closer understanding and a greater work in medicine and the general health of the public.

ADDRESS* BEFORE GRADUATING CLASS OF NURSES OF THE CHILDEN'S HOSPITAL, PHILADELPHIA, PENNSYLVANIA

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The illustrious Sir William Osler once said of Pasteur, the Great French investigator of the 19th century, that "he was the most perfect man who has ever entered the kingdom of science." For an introduction, what could be more appropriate than quoting from the creed of this noted scientist which is as follows: "Blessed is he who carries within himself . . . , an ideal, and obeys it: . . . therein lie the springs of great thought and great actions; . . . ".

I first wish to discuss with you the idea of the development of a professional ideal, an ideal of science. Perhaps it might be said that this subject is one which should have been considered in the beginning of your training. I do not think so. You have just come to the turning point of your professional careers. You have been taught both the theoretical and practical and are only now prepared to think medically for yourselves, to know what you wish to do, whether you are anxious to continue as a bed-side nurse, whether you desire to go into public health nursing, or whether you wish a career as a teacher or an executive in nursing. Perhaps you have made this decision; if not, you will soon have to do so. Your decision will affect the remainder of your life. If you marry and become inactive as a nurse, you will still have opportunities in the home and family to apply what you have learned during your training. In whatever position you are, you should now possess an ideal. It has been said, "he who cherishes a lofty ideal will one day realize it, this you will build your life by, this you will become."

Perhaps before we discuss further this ideal, the question should be asked, "Why did I choose to become a nurse?" In the early development of our characters each of us worked out unconsciously a philosophy of life that is now expressed in our thoughts, our words and our deeds. Our philosophy of life influences our minds in a way which cannot always be explained. A decision regarding the choice of a career is sometimes reached not always in a logical, rational manner, but may result from something which has been read, some conversation which has been had, or some trifling or serious circumstances or accident which excited our imagination and created an enthusiasm. In the early history of Philadelphia there were many famous characters, but none more so than Benjamin Rush and Caspar Wistar. Both decided on a medical career, but for entirely different reasons. Rush went into medicine, he says, because "God told him to", while Wistar did so because of "being struck with the happy effects of the healing art while giving inexperienced attention to a wounded soldier after the Revolutionary Battle of Germantown." Each of you can give a reason why you chose nursing as a profession; some may be the same, but others will differ. You have now realized what may to some of you at one time have seemed like a dream—for certainly through three hard long years you sometimes wonder whether you ever will complete your training and the end will come. It has come. Each one of you is now a graduate nurse and must on your own, carry on. You will have the backing of your school of nursing, but your individual acts will not be directed and supervised. Decisions will be made by yourselves. If you have learned your lessons well and remember what you have been taught, the road will be easy; if not, it will seem rough and rocky. An ideal is now needed to guide you, an ideal of nursing.

In considering this ideal, many questions suggest themselves. What should this ideal be? How should it be fashioned? What should influence this decision? And, lastly, how will I know when I have an ideal? These questions can be answered in many ways—in as many perhaps as there are persons in this audience. Pasteur's ideal came from his worship and devotion of the living and dead masters of science. He once said to the students of the University of Edinburgh, "Worship great men", and thus reverence was the dominant element in his character. There is no more perfect way to shape our ideals of life than first to study closely the lives of great men and women of the past whose ideals, firmly fixed and obeyed, led to their successes. In the light of our personalities and characters we

*Delivered on September 18, 1941.

should now reflect on theirs; observe that their minds were pliant and young at whatever age, that they had dauntless courage, devotion to duty, integrity, intellectual honesty and the pioneer spirit so essential for initiative and accomplishment. But once you believe you have found your ideal, convince your own self of its true worth and then see it clearly and live by it. It will then be a part of you, your life will develop and grow around it. It will be the guiding spirit of your every act and decision and it will truly become "The prophecy of what you one day will unveil".

In the field of nursing you know better than I what the names of Florence Nightingale, Elizabeth Blackwell, and Clara Barton stand for. They all had ideals. Miss Nightingale will forever be immortalized for her work in the Crimean War, and the establishment of your first school of nursing at St. Thomas' Hospital in London in 1860. She was the first citizen of nursing in her time, if not of all times. She had an ideal and the vision to do a great work. Dame Agnes Hunt is our foremost character in orthopædic nursing. Through her indomitable courage, great imagination and ability, working with a marked and often painful physical handicap, she established, in 1900, with Sir Robert Jones, the great orthopædic surgeon of Liverpool, the first open air hospital for cripples in England. This has been the model for hundreds of others the world over. Her ideal was reached early in life when she was a patient with acute infections of both hips. Her own suffering gave her an intense and understanding sympathy for others. This is what each one of us in medicine should have. Her life was one of unselfish service to the physically handicapped and particularly the crippled child. She further said that "the real qualities of a nurse should be common sense, gentleness and kindliness". How true this is. How difficult it is to estimate these qualities. Her life should be read by every student or graduate nurse and especially those in the field of children's nursing.

Dr. Benjamin Rush, mentioned above, was one of Philadelphia's own sons. He was a stubborn individualist and was called in his time the "Hippocrates of American Medicine". He was never a passive participant in any cause; he was a great teacher and one whose personal magnetism dominated his students, one of originality of mind, and an untiring worker, but head strong, arrogant at times and uncompromising in an argument. He had many enemies, few close friends, but the influence of his teaching was the greatest of his day. No one ever doubted the sincerity of his motives, for he was thoroughly honest and of strict integrity. He was a great believer in liberal education which he thought should include instruction in manners, morals and the Bible. He opposed corporal punishment, and the use of alcohol and tobacco. He was the only physician to sign our Declaration of Independence. On February 7, 1789, this great figure gave a lecture to his students at the University of Pennsylvania which was entitled "Duties of a Physician" or "Directions to Students for the Regulation of your Future Conduct and Studies in the Line of your Profession." There are five of these directions I wish to bring to your attention and believe are as applicable to nurses and doctors of our day as to those of a century and a half ago, and certainly, if lived up to, will make us better professional servants.

1. "Avoid singularities of every kind in your manners, dress, and general conduct."

Nursing teaches discipline, it teaches neatness of appearance, accuracy of observation and promptness; and makes you develop a pride in your work. It has been said that we are known by our look, our speech, and our gait. You wish to have both the respect and confidence of your patients and your superiors. You not only wish it, but it is essential for your success. It is true that we are not all of the same pattern in either manners, dress, conduct, look, speech, or gait, but in medicine, in order to maintain the respect and confidence of those with whom you are associated, it is most important for neither this pattern nor any part of it to be so unusual that attention is constantly being called to you because of its singularity.

2. "Let me advise you in your visits to the sick, never to appear in a hurry."

There is nothing more disquieting to an apprehensive and disturbed patient than to have a nurse or doctor hurry in and out of a sick room when he wishes comfort and encouragement. It is true that sometimes it is difficult to leave promptly after performing the necessary service, because of the patient's desire to ask questions, you should or cannot answer, but you are serving a sick person and must do what is in his best interests. You have given your life to your work and as Florence Nightingale once

said, "you are helping the sick to live"—to which should be added, to live more comfortably and peaceably. Dame Agnes Hunt once wrote "Let all doctors, medical students, matrons, sisters, and nurses remember that the primary and cardinal reason for a hospital is the good of the patient." Too often we are prone to forget the good of the patient in our desire to accomplish our work quickly and efficiently.

3. "Make it a rule never to be angry at anything a sick man says or does to you."

This rule is a very hard one to follow at times. However, I believe that everyone who is sick sufficiently to require professional attention should be considered mentally as well as physically sick. Sickness creates irritability. When you are angry, a verbal explosion to a patient will be of no avail and often make the patient worse. You must be always tolerant and understanding. Remember the patient must come first and it is your sacred duty to promote his welfare in every way possible. It was once said by Dr. William Shippen, Jr., of Philadelphia, that his temper could neither be excited by rancor nor rendered sullen and morose by opposition. Follow this example and you will never be in troubled waters because of what "a sick man says or does to you."

4. "Preserve upon all occasions a composed or cheerful countenance in the room of your patients, and inspire as much hope of a recovery as you can, consistent with truth, especially in acute disease."

The final estimation of your worth as a bed-side nurse will depend largely on how well this instruction is carried out. Cheerfulness and composure are two of the most essential qualities of a nurse. They inspire confidence more than anything else. How much better a patient will follow the instructions of either the nurse or the doctor if he has confidence in that person, we all well know. If the patient is seriously ill, it may be the difference between life and death. A famous early teacher and practitioner in Philadelphia, Dr. William E. Horner, once said that in cases of sudden emergency, the self-possession or composure of the practitioner may be the only barrier between the patient and death and the slightest confusion of mind or agitation of hand may become the turning point of safety. This is as true for the nurse as for the doctor, for often you are the only person with a medical training present to act in an emergency.

Concerning giving hope of recovery to a patient, Dame Agnes Hunt once said that "no nurse was worth her salt if she had not the joy of life in her and the power of sharing it with her patients". This does inspire hope of recovery. Imparting to the sick your own joy of life is always important. It often gives to the patient a will to live which bestows increased physical strength to fight. It was said of Sir Robert Jones that "love, kindliness and hope radiated from him". This should be the example for all of us to follow in our associations with the sick.

5. "Permit me to recommend to you a regard to all the interests of your country."

Benjamin Rush was a great patriot. It has been said that a series of articles about the colonial government called "Common Sense", which he inspired, many of which he wrote, but were not published under his name, had as much to do with the crystalization of public opinion leading up to our "Declaration of Independence" in 1776 as any other one thing which happened at that time. He not only gave of his time and energy, but also made donations of money to the Revolutionary cause. He firmly believed all patriots should do likewise. Many of us, both nurses and doctors, forget that we are citizens of a great nation and as such have responsibilities beyond the sphere of the activities of our daily lives in medicine. We do not have a Revolutionary cause to fight for, but we do have a great democracy to preserve.

First, what is a citizen? A citizen is one who is a member of a state, a person who owes an allegiance to a government which in turn will protect his life, his liberty, and his property. In these turbulent times with changing social conditions and uncertainties in government administration, it is more important than ever for us to remember that we are citizens, members of a state, and that we owe an allegiance to a great government which so long as it stands will preserve our way of living which is our life and liberty, and protect our property. With the daily reports on the happenings to citizens in many other countries, we should value this citizenship more and more.

What has been the character of your preparation for the responsibilities of citizenship? The preparation has been given to you in your early education and instruction and now during the last three years

in what you have been taught in your nurses' training. You have unconsciously been prepared for the time when you would assume these responsibilities. You have been trained in the laws of health, the value of the proper food, fresh air, sunshine and cleanliness, you have been taught to think and act for yourselves, you should have a whole hearted devotion to the happiness and welfare of others and now is the time to make use of this training. By reason of this education you are better qualified to assume the duties and responsibilities of citizenship than most other young women of your age. Whether you continue in bed-side nursing or go into public health work, teaching or executive nursing, you will find many ways in which your training may help to improve the governments of both state and nation. You have been examined and found fit to go out as certified members of a great profession. There are certain things now expected of you by your teachers, families and friends. One of these is to assume the more active duties of citizenship. If you were born in this country, you have been a citizen with full rights since the 21st year, but only now do you really go on your own and with this step you should, as Dr. Rush has said, have "a regard to all the interests of your country".

The young graduate nurse has a responsibility as a citizen to take an interest in goverment. She is a member of and an important link in our democratic society. You have and will come in contact with people in all walks of life, you have gained the viewpoints of many different people on many subjects, and now that you are leaving the guiding hand and influence of your school of nursing, you should assert yourself and make your influence felt in all matters upon which you are qualified to speak and act. You will be called upon to stand for better government, to work for the improvement of health, to advocate adequate hospital facilities for the poor, and when necessary, to fight for better maternal and infant care. Your knowledge and efforts in behalf of such movements will help bring about reforms, they will bear fruit much more so than you now suspect. Many years ago a famous English novelist wrote after a visit to our country, "There are many proofs of the growing influence of women's opinions on all matters connected with the elevation of our national life and the amelioration of our social conditions". This is a truer statement now than ever before. As a professional person you will be looked up to by the laity. You will be expected to know about inadequate medical facilities in your communities and work to improve them. If you do not, it should be your duty to inform yourself. If the statesmen who make our laws are not informed about matters of health, it will be your responsibility to supply the right leaders in the governing bodies with this information. Follow the example of Benjamin Rush and "never be a passive participant in any cause" and, as he states, you "should disdain an ignoble silence upon public subjects." Also it will be your duty as a graduate nurse to know what the laws are affecting your work and medicine, to know what constitutes the legal government, to cast your vote for the electorate who uphold what you think is right, and to know the principles of our constitution under which we are governed. When you have followed the above suggestions and perhaps many others not mentioned, you can then and only then consider that you are a good and loyal citizen.

In conclusion, I wish to leave with you the two most important thoughts developed in this discussion: (1) Form early and live by a lofty and high ideal of nursing; and (2) Remember always you are a citizen of a state and accordingly have definite responsibilities of citizenship to fulfill for our nation. Finally, I sincerely wish for each of you the greatest of success and satisfaction in your careers as nurses and hope in the years to come everyone of you will realize your ideals and ambitions.

MENTAL HYGIENE ACTIVITIES

Growing Interest in Mental Hygiene

There is a growing realization that all-out war calls for all-out effort to marshall all our national resources in order to win. As we read or listen to the many statements emphasizing this fact, our minds logically revolve around these aspects of "national resources" with which each of us is most familiar and about which we are most deeply concerned in normal times. The General thinks of military or-

ganization and equipment; the farmer thinks specificially in terms of increased food production; the railroad man and the automotive manufacturer in terms of transportation facilities; the industrialist in terms of increased factory output; the statesman in terms of governmental organization and function; the economist in terms of financial resources and their use; all of which is vitally important to the effort necessary to win.

So, the physician, who normally thinks primarily in terms of human beings, their health or lack of health, their injuries and their diseases, logically at a time like this, experiences a tremendously intensified concern for the conservation of human resources.

Great advances have been made during the past century in knowledge of the normally functioning body—physiology, as well as in functioning of the body under abnormal conditions in one or more of its organs—pathology.

Up to relatively recent years, however, this interest has been focused in the main on the physical, with individual health and public health evaluated in terms of physical hygiene.

Now we find that from the viewpoint of the public health worker and from the viewpoint of the practitioner of medicine and surgery, as well as from the viewpoint of the psychiatrist, Mental Hygiene is being more and more recognized as of fundamental importance for the successful handling of many medical problems, especially when, as is so often true, there is a social or family background influencing the situation.

Since nomenclature is important for full understanding of a subject, it may be well to undertake here to define certain terms.

What, then, is meant by the term "mental hygiene"? It has been described as the medical branch of psychology and also as the psychological branch of preventive medicine. It concerns itself with ways and means, the processes leading to normal behavior or in other words to the normal response of the person to his environment—the world in which he "lives and moves and has his being". Environment has its physical elements such as housing, clothing, food, schools, playgrounds which are the concern of physical hygiene. Environment also has its mental, social and spiritual elements which are the business of mental hygiene which is closely related to religion.

The social elements involving other people as well as the individual himself are those to which the *Person* as a whole reacts in terms of behavior.

The spiritual elements of the environment, so difficult to define, must be considered as of supreme importance in the determination of human behavior and may be thought of under the term, ideals.

While Mental Hygiene is still very young, it even now can offer enough for us to say that many breakdowns, with consequent lapses in normal behavior, can be cured and that many can be prevented through the use of knowledge now at our command—knowledge which if rightly used may help to guide into right habits, normal adjustment to environment, to happiness and successful living.

Conversely, failure to make use, consciously or unconsciously, of the principles of mental hygiene may lead to wrong habits and manifestations of the escape mechanism through insanity, drug addiction, alcoholism, suicide or a criminal career.

So as we attempt to visualize the ideals toward which mental hygienists are looking, we may use the expression of a farseeing North Carolina psychiatrist who said, "The objective of Mental Hygiene is successful living".

Mental Hygiene as a national movement had its beginning early in this century with the publication of "A Mind That Found Itself" by Clifford Beers. Some practical outgrowths of this movement are:

(1) Marked progress in understanding of mental health and mental illness, and improved facilities for the study, treatment and care of the mentally ill.

(2) Efforts to prevent mental breakdowns.

(3) A more hopeful attack on problems of mental defectiveness in the light of eugenics.

(4) Child Guidance with a view of encouraging and promoting normal adjustments and the formation of right habits of thinking and acting.

Progress in the physical sciences—physics, chemistry and engineering during the past century, has been asounding. This knowledge has brought creature comforts and luxuries hitherto unknown, yet has also increased a thousandfold man's power to destroy his fellow man and the property belonging to him.

Progress in the social sciences—psychology, sociology and the humanities—has been slow and apparently lags behind. Possibly this will always be

so. Perhaps at this time, our faith in the ultimate triumph of goods needs the reassurance to be brought to us by contemplation of Lowell's inspired thought:

"Right forever on the scaffold
Wrong forever on the throne,
Yet within that scaffold's shadow
Standeth God keeping watch above His own."

The physician especially trained in psychology and psychiatry is and must always be the main motivating force in the study and practice of mental hygiene. Yet, for the purpose of this discussion, I desire to point out that the family physician and particularly the pediatrician are finding that more and more must their interest extend to knowledge of the emotional and mental factors involved in many professional problems.

Wise guidance for the individual child and also for his parents often calls for knowledge of this field, also for wisdom to understand and properly evaluate the given problem and to follow through in the measures indicated in situations often complex in nature.

Furthermore, other individuals and agencies must from the nature of things be concerned with mental hygiene and its application to situations which are sociological as well as medical in nature.

For example, our schools are more and more realizing the need of aid from the psychologist and the psychiatrist in solving problems of retardation; of certain defects, as in speaking and reading, and in abnormal behavior reactions. Definite information based on psychological tests as to a child's educational and occupational level of ability may be of tremendous value to the teacher and to the vocational councilor.

Problems of school management (discipline) often arise because a boy having reached his highest achievement level rebels often in exaggerated fashion against demands for achievements beyond his ability.

Alcohol and drug addiction are sometimes the product of a psychopathological condition and furnish a means of escape from a situation which, to the individual, is intolerable.

Courts, especially Juvenile and Domestic Relations Courts, frequently need the aid of information to be secured only through psychiatric study. It is encouraging to note a growing interest on the part of judges of such courts in securing this aid.

As we consider then the possibilities for mental hygiene development and the growing interest on the part of physicians, parents, teachers, social workers and judges, may we not logically raise the question, how can an organized effort best be developed in Virginia to bring the benefits of mental hygiene work within reach of all sections of the state?

Manifestly only the larger centers of population can be expected to maintain psychiatrists or mental hygiene clinics on a full time basis. It would therefore appear that through cooperation of various state and local public health, medical, social and educational organizations, a plan might be evolved for the organization of traveling clinics.

In Danville, since 1935, we have had the benefit of monthly clinics conducted by Dr. David C. Wilson of the University of Virginia. These clinics have been too infrequent and have had insufficient follow-up service, yet they have been well worthwhile. We hope to have this service enlarged.

Perhaps our Danville experience has also at least suggestive value to other localities.

R. W. GARNETT, M.D.,
Director of Public Health,
Danville, Virginia.

CURRENT INFORMATION ON SYPHILIS

Sponsored by
THE COMMITTEE ON SYPHILIS CONTROL
MEDICAL SOCIETY OF VIRGINIA

Laboratory Diagnosis of Syphilis—Part I

In 1905 Fritz Schaudinn discovered the causative organism of syphilis, the treponema pallida, and in 1906 August Von Wassermann introduced the first serologic test for the diagnosis of the disease.

Since that time we have used these two invaluable contributions to medical science as laboratory aids in establishing a diagnosis.

The principle of darkfield examination has remained the same except for improved darkfield apparatus with which to make the examination. The original Wassermann, however, had undergone mod-

ifications by many workers constantly striving to improve the specificity and at the same time maintain as nearly as possible 100 per cent sensitivity. Later, another type of serologic test was developed, known as the precipitation test and it had the advantage of being less expensive and more simplified. Examples of precipitation tests are: the Meinike, Muller clotting reaction, Kahn, Hinton, Kline, Eagle, etc.

In as much as the blood does not become positive until after the early part (two weeks or more) of the chancre stage, the serologic test does not serve us at this time when a diagnosis is of greatest advantage. Thus, in order to make a diagnosis in the seronegative stage, a darkfield microscopic examination is our only certain method, and it enables us to visualize the living spirochete, in the serum extracted from the local lesion.

The effectiveness of treatment of early syphilis lies in the earliest possible diagnosis, followed by immediate and adequate treatment according to modern methods. By early treatment we enhance the patient's chance for cure, and from the public health point of view, remove a possible source of infection to others.

Darkfield examination, while essential in primary syphilis, is also of advantage in diagnosing secondary lesions. However, in this stage the serology is usually positive.

It is regrettable that the original discovery of Schaudinn has not been carried to its logical outcome; namely, the development of some plan whereby darkfield examination may be made easily available to all physicians. Today, to many physicians, syphilis is summed up and described in terms of a positive serologic test. How few know it in that far more significant phase, the seronegative, darkfield-positive syphilis of the first few days of the primary lesion.

Darkfield examination requires special expensive apparatus and skilled technique. In the past it has been necessary to send the patient to the laboratory for the examination, a procedure which has greatly limited the use of this most valuable diagnostic aid.

While admittedly the sending of a patient to the laboratory, permitting the collection and examination of the specimen by trained personnel, is the most reliable procedure, the examination needs to be made available to physicians who cannot send patients to the laboratory.

Experiments were undertaken to determine how long spirochetes remain viable and retain their characteristic movements and form in specimens taken from syphilitic lesions.

In recent years Surgeons J. F. Mahoney and K. K. Bryant of the U. S. Public Health Service, experimented with specimens taken from scrotal chancres of animals and specimens from human syphilitic patients. The serum thus obtained was collected in capillary tubes and stored respectively in the refrigerator, at room temperature, and in the incubator. The specimens kept in the refrigerator and those at room temperature, demonstrated spirochetes of characteristic form and retained a degree of motility after 96 hours and over. Those kept in the incubator became rapidly overgrown with other organisms. Motility decreased with the passage of time. In one isolated case, motile organisms were found 13 days after the specimen was collected.

In 1932 McNabb, Matthews, and McClure of the Division of Laboratories, Department of Health, Ontario, Canada, experimented to determine whether a darkfield examination carried out on chancre fluid, forwarded by mail, would prove reliable. Four clinics situated from 150 to 1,000 miles distant sent specimens for examination. Darkfield examination demonstrated characteristic form and motility in a total of 72.7 per cent positive results. They state this figure would have been much higher had not a number of specimens been submitted from non-syphilitic cases.

The highest efficiency in the darkfield examination occurs within the first two weeks of the primary lesion. The shorter the duration of the lesion prior to examination, the more significant a negative finding; but no *negative* darkfield examination in and of itself, even if repeated (which it should be for 3 trials), fully eliminates syphilis from the diagnosis. All negative darkfield examinations should be followed by serologic test once a week until the lesion is six weeks old, then every two weeks for three months.

The Division of Venereal Disease Control of the Virginia State Department of Health gives this new laboratory service to physicians throughout the state; namely, the delayed darkfield examination. It is reasonably assured, from the experiments cited above and other studies, that if a satisfactory specimen is submitted to the laboratory, a proper darkfield examination can be made. Mailing containers

with the essential equipment will be furnished. The equipment will consist of three capillary tubes for fathering and holding the fluid, a vial containing a mixture of paraffin, vaseline, and beeswax for sealing the ends of the tubes and a glass tube for holding the capillary tubes.

The greatest factor of uncertainty in such a plan lies in the possibility of carelessness in taking the specimen. While the method is comparatively simple, it must be carried out with exactness and care.

The pamphlet, "The Management of Syphilis in General Practice" issued by the U. S. Public Health Service, gives the following instructions for taking a specimen:

> "If the lesion is covered with a crust or scab, remove it. Then wash the lesion thoroughly with a gauze sponge wet with plain tap water (no soap) or normal salt solution, to remove gross surface infection. This should be dried off and the surface of the lesion abraded with a dry sponge (gauze), sufficient to provoke slight bleeding and exudation of serum. As oozing occurs, gently wipe away the first few drops, especially if they contain blood, waiting for a drop of clear serum to appear. It is rarely necessary to squeeze the lesion."

The serum is collected in the capillary tube by holding the tube horizontally and touching one end to the exuded serum. All three tubes should be filled if possible. The ends of the tubes are then sealed by pressing them into the mixture of vaseline, beeswax and paraffin. Keep in the refrigerator if possible until the specimen can be mailed, which should be done as soon as possible. Notification of a positive darkfield examination will be made by telegraph where this will speed up the report.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was a twenty-six year old unmarried colored woman, who had an abortion at home during the third month of her pregnancy. She was not seen by a physician until three days later when she was found to be anemic and acutely ill. She was immediately referred to a hospital.

At the time of admission to the hospital the temperature was 102, pulse 110, respirations 24. A small amount of vaginal bleeding was present at intervals and the lochia had a foul odor. Red blood count 1,510,000; hemoglobin 30 per cent; white blood count 12,950. Twelve hours after admission a dilatation and curettage was done under general anesthesia. Two hours later a transfusion of 500 cc. of whole blood was given. Ergotrate tablets one three times daily and sulfathiazole gr. 15 every four hours were prescribed. On the third postoperative day potassium permanganate douches were started and were given twice daily for five days. Another transfusion of 500 cc. was given on the ninth postoperative day. Venoclyses and pantopon were given P.R.N. Two blood cultures were negative. The temperature continued to be septic in character varying from 103 to 105.4 degrees. She died on the twelfth postoperative day. Autopsy was not performed.

DISCUSSION

This has been classified as a preventable obstetrical death. The cause or causes of this abortion are of course unknown to the committee, but it is quite likely that they were entirely of a preventable nature. Then after the abortion did occur the patient failed to avail herself of any medical attention until she was critically ill. In addition, the treatment, which was instituted after admission to the hospital, is hardly in line with the present accepted methods of treatment for infected abortions.

In the report of last month the dangers of operative invasion of the infected uterus were discussed, and those same facts also apply to the management of infected abortions. This patient with a temperature of 102 was subjected to a curettage under general anesthesia approximately twelve hours after admission to the hospital. In spite of severe anemia from blood loss, only two transfusions were given. Douches were given twice daily for five days. While the douches may have done no harm, obviously they were of no help, while the curettage was probably conducive of considerable harm. The only justification for curettage of the infected uterus is alarming hemorrhage, and usually badly infected abortions do not have profuse bleeding. Frequent massive transfusions of whole blood, chemotherapy, and general supportive measures would have offered this individual a better chance of survival.

The Council Medical Society of Virginia

A meeting of the Council of the Medical Society of Virginia was held in the Library of the Jefferson Hospital, Roanoke, Virginia, on June 29, 1942, at 3:45 P. M. Dr. J. M. Emmett, President-Elect, presided at this meeting, having been authorized to do so by Dr. Roshier Miller. The following members were present:

Dr. J. M. Emmett, Clifton Forge.
Dr. Julian L. Rawls, Norfolk.
Dr. J. L. Hamner, Mannboro.
Dr. W. C. Akers, Stuart.
Dr. W. L. Powell, Roanoke.
Dr. A. F. Robertson, Staunton.
Dr. H. B. Mulholland, Charlottesville.
Dr. C. B. Bowyer, Stonega.

There was a discussion of the question of the letter sent out by Dr. Cole, Chairman of the Committee on Legislation relative to raising funds to finance the educational program concerning proposed future legislation. Dr. Alex Robertson made a motion that a sufficient number of mimeographed letters similar to the one which was sent to the Councilors be created and turned over to these councilors to be used at their discretion in contacting the men in their communities. This motion was seconded by Dr. J. L. Hamner. It was then placed before the body for discussion and disposal. The motion was carried by a majority vote.

It was suggested that the council thank Dr. Hugh H. Trout for his work and sacrifice as Chairman of the Procurement and Assignment Service. This was placed in the hands of Dr. J. M. Emmett who is to see that it is done.

There being no further business, the council adjourned at 4:15 P. M.

MARY E. EDDY,
Acting Secretary.

Approved:
J. M. EMMETT,
President-Elect.

Military Medicine

Report of Tour by Recruiting Board of the Army and Navy.

The State Chairman of the Procurement and Assignment Service for Virginia accompanied the representatives of the United States Army and Navy throughout a tour of the state and welcomes this opportunity to make a report to the members of the medical profession of Virginia.

In each congressional district the councilor of the Medical Society of Virginia or his representative joined this group and accompanied them throughout his respective congressional district. In the Sixth Congressional District the State Chairman was not able to accompany this group, but Dr. W. L. Powell of Roanoke did make the trip throughout his entire district. The recommendations made by Dr. Powell after the tour of the Sixth Congressional Distract were discussed with the State Chairman and met with his full approval.

In this manner, every doctor within the State of Virginia was given an opportunity to express his views regarding his relationship to the civilian medical needs of his community as well as his own possible availability for military requirements.

Every community was informed that the Procurement and Assignment Service had no authority and acted only in an advisory capacity to the Selective Service System.

At the completion of the tour of each Congressional District, a conference was held to consider the availability of various doctors under forty-five years of age for military service as well as essential needs of each community. In order that such conferences might have the benefit of full information relative to the needs of various and different communities, frequently the heads of various industries, members of the various Selective Service Boards, etc., were consulted by the State Chairman, and this information was given to the group while considering the various situations in each community. Often such information was first obtained by the various councilors, before the arrival of the group in his district.

In some localities arrangements were started toward the replacement of younger doctors by older doctors who had physical conditions which would prevent them from serving in military service. This would release more doctors to meet the military needs and would do so without unduly upsetting the civilian communities.

All health officers under the jurisdiction of the

State Health Commissioner were requested to remain in their present positions. This group was further requested not to resign from the State Health Department, but, if they felt they must go into the military service, not to make any attempt to change their status until after consultation with Dr. Riggin. They were further informed that if they remained with the State Health Department their respective Selective Service Boards would be requested to consider them as essential for community needs.

The same attitude was taken as regards those doctors associated with our four State Hospitals for the mentally sick as well as the two hospitals of the Veterans' Administration.

The fine spirit of co-operation exhibited by the medical profession, as well as by the laity, speaks well for the attitude of our citizens towards the present national emergency. This was especially true of our two medical schools and their associate hospitals. Had it been possible for every doctor in the State of Virginia to have been present at these two conferences with the representatives of our medical schools, your State Chairman of the Procurement and Assignment Service is certain they would share with him the pride in the patriotism of these two institutions.

Everyone in this State can be assured that not only is the teaching of medicine in safe hands, but also by the example of these teachers, we need have no fears as regards the future attitude of the medical profession in their duty to their country.

At both schools, we were fortunate to also have members of the Advisory Council of the Procurement and Assignment Service. At the University of Virginia, we had Dr. J. M. Emmett; and at the Medical College of Virginia, Drs. Roshier Miller and I. C. Riggin were present and were, of course, a great help.

After conferences in each congressional district a notice was sent to each doctor who was considered available, as can be seen by the following notice.

OFFICE OF THE CHAIRMAN
PROCUREMENT AND ASSIGNMENT SERVICE
STATE OF VIRGINIA

_____, 1942

From: The State Chairman of Virginia.

To: Dr._____

The above-named candidate is available for Military Service. If not available at present, date of your availability is_____, 1942.

Remarks:_____

_____

HUGH H. TROUT.

DEAR DOCTOR:

The above is the recommendation that was made by the Procurement and Assignment Service of Virginia, concerning your availability for Military Service.

Of course, you realize that your final status rests with your Local Selective Service Board, if you are under forty-five years of age.

If there is anything further this board can do for you. I trust you will not hesitate to call on us.

Yours very truly,

HUGH H. TROUT,
Chairman, Procurement and
Assignment Service.

It was explained to all groups of doctors that only those who were under forty-five years of age, who the Procurement and Assignment Service considered available, would be notified. It was further explained that the date of any doctor's availability was his own individual problem and that if he was under forty-five years of age, the question of whether he was essential for civilian needs or not would be finally solved by his Local Selective Service Board if he waited until his registration number was called.

It was further explained that if a doctor refused to accept a commission after it was offered him, his Local Selective Service Board could not reasonably be expected to consider any claims for exemption and further deferment on the grounds of dependencies.

In order that the doctors of Virginia might have no difficulty in discussing any affairs they think might be of aid in helping to solve the many different problems that now confront us all and which change from time to time, you will find below a list of the councilors and their representatives and the districts they represent:

DISTRICT	COUNCILOR AND REPRESENTATIVES
1	Dr. Griffin W. Holland, Eastville, Va. Accomac and Northampton Counties.
	Dr. Frank C. Pratt, Fredericksburg Spotsylvania, Caroline, Essex, Westmoreland, and Northumberland Counties.
	Dr. O. T. Amory, Newport News; Dr. W. O. Poindexter, Dr. H. D. Howe, Hampton York, Warwick, and Elizabeth City Counties

2. Dr. Julian L. Rawls, Norfolk
3 Dr. J. M. Hutcheson, Richmond
4 Dr. J. L. Hamner, Mannboro;
Dr. W. B. McIlwaine, Petersburg
5 Dr. W. C. Akers, Stuart
Wythe, Grayson, Carroll, and Patrick Counties
Dr. Julian M. Robinson, Danville
Franklin, Henry, Pittsylvania, Halifax, and Charlotte Counties
6 Dr. W. L. Powell, Roanoke
7 Dr. Alex F. Robertson, Staunton
8 Dr. H. B. Mulholland, Charlottesville
9 Dr. Claude B. Bowyer, Stonega

ADVISORY BOARD
DR. ROSHIER W. MILLER, President, Medical Society of Virginia
DR. J. M. EMMETT, President-Elect, Medical Society of Virginia
DR. I. C. RIGGIN, State Health Commissioner

All the councilors have advisors in the different parts of their districts. In those districts in which the names of the different representatives are not published, the district councilor's residence is located where he can be personally contacted by any one desiring to see him.

While it is hoped that any one so desiring will first consult his nearest councilor or representative, still the services of your State Chairman will always be available to each doctor in Virginia. However, in most instances, the local representatives are in better positions to advise, for they know the local conditions. Also it is the policy of the State Chairman never to give an opinion without first having the advice of the local representative.

To appeal to political parties before consulting the State Chairman is equivalent to admitting that the doctors in Virginia are not capable of managing their own affairs. Such an approach justifies the opinion of some politicians that doctors will have to have their affairs handled for them in the future by a paternalistic government. I am sure every doctor in the State of Virginia will agree with this stand. I want to take this occasion to assure each doctor in the State that if he thinks the Procurement and Assignment Service in Virginia has not made a correct suggestion in his case, his case also will be reviewed by those in charge of the Procurement and Assignment Service in Baltimore or Washington.

We heard some remarks about Virginia's quota in comparison with other states. Such a comparison is actually none of our affair. A quota also necessarily changes with the size of the military services. Our chief job is to see that civilian needs are not made to suffer by the withdrawal of too many doctors. The Procurement and Assignment Service in Washington can and will see that no one State will be allowed to compensate for the deficiency of another state.

Since the quota is a variable factor and must be determined from time to time, we can only assure you that we will see that the needs of the armed forces are met without harming any community.

It is the earnest desire of your Procurement and Assignment Service to see that too many doctors do not volunteer and insist on their commissions being accepted and demand that their clearance papers be marked "available for military service".

Recently the military services have been informed that they could not accept any doctor for service until his application had been marked "available" by the Procurement and Assignment Service. This will help us to protect the various communities throughout the state.

Previously there have been instances where doctors insisted on going into the military service when the Procurement and Assignment Service thought they were "essential for community needs".

For Virginia to have such a low unfilled quota, eighty-six, as stated in the June 27, 1942, issue of the *Journal of the American Medical Association*, indicates that many doctors have previously entered the military services.

During this tour it was arranged that news items and editorials were published explaining to the laity that if doctors were decreased in number in their communities, the laity should not make unnecessary calls on the remaining doctors' time. It is hoped that each doctor will continue to educate his patients along these lines, but that he will do so in a sane manner so as not to cause hysteria.

My sincere thanks go to Major Joseph M. Dixon, M. C., Major George D. Adamson, Major Douglas M. Hadley, and Sergeant Joseph A. Mitchell of the U. S. Army and to Lieut.-Comdr. J. F. Miller, Lt. Wellford C. Reed, and Ensign Roberts of the U. S. Navy for their careful and efficient work. Without them this survey could not have been made. Although their uniforms would naturally tend to give

a military atmosphere to any group, still their quiet gentlemanly personalities made all gatherings informal and effective.

This Recruiting Board started with a list of the names of every doctor in the State of Virginia and the fact that every doctor was either seen personally or sufficient information obtained about him attests to the thoroughness with which this work was done.

To the councilors and their respresentatives as well as to this Recruiting Board goes much credit for the 100 per cent successful contacts. However, the various local newspapers contributed much to this success. In many instances we were informed by doctors, especially those doctors whose names we did not have on our list, that some patients of theirs had seen the account in the newspapers and had asked them to be sure not to miss the same.

In closing this report, I want to state my belief that no State Chairman of the Procurement and Assignment Service in the United States has had better co-operation from his advisors than I have had from our councilors and their representatives. They have worked hard and honestly and with an intelligent understanding of local needs and military necessities. This we all would expect from the men we have elected to represent our profession, especially in such a time as this in which we are now living.

To each of them I extend my grateful thanks of appreciation. To the rest of our profession, I want to assure you we will continue to make our best efforts to see that there will be maintained a proper balance between civilian needs and military necessities. Such can only be done however with the hearty co-operation of every doctor in Virginia.

Now, having seen and interviewed most of you personally, I want to tell you that I am prouder of our doctors than I have ever been and am more confident than ever that while we all do have our problems and will continue to have them in the future, the medical profession of Virginia can and will meet them in a sensible and sane manner.

HUGH H. TROUT, *Chairman, Procurement and Assignment Service, State of Virginia.*

This report was read and approved by the Council of the Medical Society of Virginia, State Director of the Selective Service System, and Dr. Sam F. Seeley, Executive Officer of the Procurement and Assignment Service of the United States.

Public Health Statistics

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for June 1942, compared with the same month in 1941, and for the period of January through June 1942, compared with the same period in 1941 follows:

	June 1942	June 1941	Jan.-June 1942	Jan.-June 1941
Typhoid and Paratyphoid Fever	14	13	75	71
Diarrhea and Dysentery	409	394	913	669
Measles	345	2,809	4,629	32,554
Scarlet Fever	50	47	709	882
Diphtheria	14	29	214	213
Poliomyelitis	3	2	9	12
Meningitis	15	8	109	65
Undulant Fever	4	1	13	7
Rocky Mountain Spotted Fever	11	1	14	9
Tularaemia	1	0	23	19

PRESENT MATERNAL MORTALITY IN THE STATE

The participation of women in industry, the war-created upsetting of family routines, and the necessary withdrawal of many physicians from civilian practice may increase to some extent the hazards of child-bearing.

Mortality associated with childbirth in Virginia has shown gratifying decreases within the past five years. The rate, however, is still far too high. Last year in the State, 229 mothers lost their lives from maternal causes, or about four in every 1,000 live births. In 1936, 296 mothers, approximately six in every 1,000 live births, succumbed. Among the colored race in 1941, the rate of 6.6 per 1,000 was more than twice as great as the white race of 2.9.

Contrary to the opinion that maternal deaths do not occur in significant numbers among the young, 12 per cent of deaths from all causes among females of ages 15 to 19 years in the State last year were due to this cause. Fifteen per cent of all deaths among women between 20 and 24 years were maternal.

As might be expected, the years of lowest puerperal mortality had the highest proportion of births attended by physicians. During the past five years, with a yearly average of 264 maternal deaths, 75 per cent of births were attended by physicians. For the previous five-year period, with an average of

327 maternal deaths, 70 per cent of births showed medical attendance.

The part played by prenatal care in the reduction of maternal mortality cannot be overemphasized. Physicians have expressed the opinion that the proper care of mothers before, during, and after the birth of their babies would be a factor in reducing further the number of maternal deaths.

There has been an increased tendency on the part of the physician to insist that the patient have adequate care during the prenatal period as well as a readier acquiescence to this proposal on the part of the patient. Formerly, prenatal care was sought when there was a definite complaint often not related to the pregnancy. In addition, there has been improvement in care at the time of delivery as is evidenced by the larger number of babies being born in hospitals and births attended by physicians in the home. Often after-care of patients has been neglected because it was thought by many that when the delivery was complete further care was of little importance. Many patients now are realizing the importance of after-care and are returning to their physicians for that purpose. The sustained efforts of physicians and public health personnel have been responsible for much of this improvement.

The continuation of the downward trend from this cause of death in Virginia is of special significance in view of the present war situation in order that the gains of the past few years may be maintained in the immediate future.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However we assume no obligation in return for the courtesy of those sending us the same.

Heredity, Food, and Environment in the Nutrition of Infants and Children. By GEORGE DOW SCOTT, A.B., B.S., M.D. Consulting Pediatrician to the Lutheran Hospital, New York City, and to the Nassau Hospital, Mineola, L. I., N. Y.; etc. Boston. Chapman and Grimes. 1942. xvii-778 pages. Cloth. Price $5.00.

War Gases. Their Identification and Decontamination. By MORRIS B. JACOBS, Ph.D., Food, Drug and Insecticide Adm., U. S. Dept. of Agriculture, 1927; Chemist, Department of Health, City of New York, 1928; etc. Interscience Publishers, Inc. New York, N. Y. 1942. xiii-180 pages. Cloth. Price $3.00.

The Management of Fractures, Dislocations, and Sprains. By JOHN ALBERT KEY, B.S., M.D., St. Louis, Clinical Professor of Orthopedic Surgery, Washington University School of Medicine; Associate Surgeon, Barnes, Children's and Jewish Hospitals. And H. EARLE CROMWELL, M.D., F.A.C.S., Birmingham, Ala., Orthopedic Surgeon to the Tennessee Coal, Iron and Railroad Company and the Orthopedic and Traumatic Services of the Employees' Hospital and to the American Cast Iron Pipe Company; Chairman of the Committee on Fractures and Traumatic Surgery of the American Academy of Orthopedic Surgeons; etc. Third Edition. St. Louis. The C. V. Mosby Company. 1942. 1303 pages. Illustrated. Cloth. Price $12.50.

The Eye Manifestations of Internal Diseases. By I. S. TASSMAN, M.D., Associate Professor of Ophthalmology, Graduate School of Medicine, University of Pennsylvania; Attending Surgeon, Wills Hospital, Philadelphia. St. Louis. The C. V. Mosby Company. 1942. Octavo of 542 pages. With 201 illustrations including 19 in color. Cloth.

Blood Grouping Technic. A Manual for Clinicians, Serologists, Anthropologists, and Students of Legal and Military Medicine. By FRITZ SCHIFF, M.D., Late Chief of the Department of Bacteriology, Beth Israel Hospital, New York, N. Y. And WILLIAM C. BOYD, Ph.D., Associate Professor of Biochemistry, Boston University, School of Medicine; etc. 1942. Interscience Publishers, Inc. New York. xiv-248 pages. Illustrated. Cloth. Price $5.00.

Chemistry and Physiology of the Vitamins. By H. R. ROSENBERG, Sc.D. 1942. Interscience Publishers, Inc., New York, N. Y. xix-674 pages. Cloth. Price $12.00.

This book, written by a man who has worked with Ruzicka and is now with the Du Pont Jackson Laboratory, is in my opinion, the best publication on the vitamins which has yet appeared. Following a general discussion of the history and nomenclature of the vitamins, he discusses each one individually under such headings as Occurrence Properties, Methods of Isolation, Chemical Constitution, Synthesis, Industrial Preparation, Biogenesis, Assays, Physiology and Pathology. The book is extraordinarily complete in spite of its apparently short discussion of each of the above points. It is doubtful that the average clinician would need such a complete work, but it is essential for teachers, research workers, and the industry. An interesting feature is the long list of patents granted for methods of vitamin extraction. The only slip I was able to find was one page 13: ". . . . the compound which prevents permeability of cells is 'vitamin P'." Insertion of the word *excessive* would be of benefit.

The author is to be complimented on having so ably handled an extremely difficult subject in such a brief and thoroughly readable form.

R. J. M.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, $2.00. Single Copies 25c.

VOL. 69. AUGUST, 1942. No. 8

Editorials

War Brooks No Delay

THE report of the State Chairman of the Committee on the Procurement and Assignment Service for Virignia is printed elsewhere in this issue of the MONTHLY. It clearly reveals the vigor and dispatch with which the committee has addressed itself to its task of touring the state to appraise local conditions and to bring home to eligible and available physicians the need for their immediate application for commissions in the medical corps of the armed services. We congratulate the chairman, Dr. Hugh Trout, and his committee.

It is perhaps not surprising that there has been some undercurrent of criticism arising in the wake of an undertaking prosecuted so rapidly and so thoroughly as has been this one. The civil population of the state fears it has been depleted of essential medical services. Private citizens are wondering what is to become of them in the event of another epidemic comparable to that of 1918. It is true that the teaching staffs in our medical colleges have been heavily drawn upon. What is to become of medical education in the state? One answer to these manifestations of anxiety is the fact that aside from those already in the reserve corps, less than 300 Virginia doctors have joined the armed forces to date, a little more than one out of every ten physicians.

Another criticism is based on Paul V. McNutt's prepared statement that appeared in the June 25th issue of the *J.A.M.A.* Here it was said that

> We need more than twenty thousand additional physicians by the end of this year. But eight states—New York, Illinois, California, Pennsylvania, Massachusetts, New Jersey, Michigan and Ohio—should account for nearly sixteen thousand of that shortage.
>
> By contrast, sixteen states have fewer than a hundred physicians to go to reach the total number they should supply. In order not to deplete unduly available medical service in those areas, we are asking that the Medical Officers Recruiting Boards be withdrawn and that further enlistments from those areas be then discouraged except

in the case of the men under 37 in the urban areas. Those states are Alabama, Arizona, Delaware, Idaho, Louisiana, Mississippi, Montana, Nevada, New Mexico, North Dakota, South Carolina, South Dakota, Utah, Vermont, Wyoming and Virginia.

If Virginia has done so well, why, ask the critics, was there such a hue and cry, such a loud beating of the bushes for more physicians in Virginia to volunteer? The answer is that when we say that Virginia's quota is almost complete we are speaking of the present. Twenty thousand doctors are needed for the armed services by January 1, 1943, but before another twelve months have passed, the call for an additional 20,000 may be raised. Then Virginia must again respond with promptitude and vigor. The work done by the Committee on Procurement and Assignment will make us better informed and ready and able to respond again to the country's needs in the most intelligent way.

The White Coat

HERE is a doctor who disdains the white coat. He hates it. He tells himself it is puerile. He thinks of it as the vestment of a dozen callings less honorable than his own. He regards the mind that sanctions it as the victim of a sort of exhibitionism that he cannot abide. He holds that the physician, his title won by years of hard work, approved and guaranteed by the legal statutes of his state, needs no such trapping to help him impress the public. You will never find this doctor wearing a white coat in his office. If you did the sky would fall.

What does the white coat connote? Is there a philosophy, a psychology, an economy, of white coats? There are doctors who wear them and doctors who refuse to wear them. Why such a violent difference of opinion on such a simple matter?

We might begin this serious investigation by asking ourselves how the custom of the doctor's wearing the white coat came about. Does it stem from his habit, all down through the centuries, of dressing in a manner distinctive of his profession? Does it have any relation to the long robe and the short robe that he wore in the Middle Ages? The present generation of physicians is probably the only generation that has eschewed a distinctive dress on public appearance. Who can tell a physician today from any other honest citizen on the street? Only a canny Sherlock Holmes with an uncanny eye for the most minute details. This was not true a generation ago. Then the physician's high hat and cutaway coat made him easily recognized by everyone.

We know very well when the vogue for white was started. When the Nightingale nurses rustled on to the stage with their emphasis on neatness, cleanliness and decorum, when Lister and Pasteur made operating rooms the clean, germ-proof workshops of surgery, when hospitals began to look spick and span and to pride themselves on appearance, washable, sterilizable, white clothes became necessary. Orderlies, nurses, internes and surgeons in the operating room donned white attire. When Lister's ideas finally filtered through to the public, and sanitation became a word the man on the street could understand, white was adopted as the emblem of the germless state. Barbers, butchers, hairdressers, dentists, druggists, even street cleaners, joined the army of white knights laboring to usher in a spotless world.

In hospitals white clothes became the symbol of aseptic medicine. White clothes became a uniform, a part of the hospital's *esprit de corps*. The fledgling physician found to his delight that his white clothes kept him from being confused with his patients' visitors. They achieved for him a certain respect that his youth, unaided, could not command. After two years of serving as a man in white, he usually sheds his white with a feeling of relief. He has outgrown the necessity of having to maintain his position by an external sign. He has come to realize that a physician should

try to make his way by what he is and not by what he seems to be or by what other people think he is.

But a strange thing happens. Before he knows it he is back again in white. If he becomes a surgeon he gets so busy that he forgets, or does not have the time, to exchange his operating gown for his plain clothes, and finds himself making his rounds dressed in the same white gown in which he appeared in the operating room. If he becomes a full time professor and is a researcher in the laboratory, he wears again a white coat to protect himself against blood, acids and other noxious substances. When the time comes to make his ward rounds, he, like the surgeon forgets to remove his work coat and discovers by chance the rarified atmosphere he creates, and the white coat becomes a matter of choice. If he becomes the less spectacular general practitioner and visits the hospital, he meets the surgeon and the professor in the corridor and thinks: "These birds with their flock of internes and nurses following in their train look pretty grand in their white coats", and so, not to be outdone by the gentlemen of the scalpel and the gentlemen of the stethoscope, the archangels of the profession, he returns to his little office with a new resolve. He is determined to bring glamor and drama into his quiet regime. He orders a change of white coats and is as punctilious in wearing them when about his business as any butcher, barber or bar tender of his acquaintance.

Perhaps the fashion has come to stay, for there are certain advantages accruing to it. It is a little like the carpenter's wearing overalls, the cook's wearing an apron—a matter of protection from wear and soil. It may be cool, and it makes a man feel professional, if it doesn't make him feel a fool.

News

The Roanoke Meeting.

Plans are shaping up nicely for the Roanoke meeting of the Medical Society of Virginia, October 5-7, and in the next issue of the MONTHLY, there will be the preliminary program.

Have you made your hotel reservations for this meeting—if not, the names of hotels and their rates were published in the April issue. Look them up today and make your reservation at once!

It is realized that doctors will be unusually busy for sometime but it is believed that a couple of days of relaxation and meeting old friends will better fit you for the days to come.

The Southwestern Virginia Medical Society

Is to hold its next meeting in Radford, Thursday, September 3, with headquarters at the Governor Tyler Hotel. This is to be the annual meeting and new officers will be elected. The President is Dr. W. C. Caudill of Pearisburg and the secretary Dr. David B. Stuart of Roanoke.

Piedmont Medical Society.

At a recent meeting of this Society, Dr. Percy Harris, Scottsville, was made president, and Dr. E. D. Davis, Crozet, secretary.

Doctor Promoted in the Service.

Dr. Walter E. Vermilya of Clifton Forge, who has been on active duty in the army since March, 1941, has recently been promoted from the rank of captain to that of major in the Army Medical Corps. At last report he was in the British West Indies.

The American Physicians' Art Association

Held its fifth annual exhibition at the time of the meeting of the American Medical Association in Atlantic City, June 8-12. There were 350 original art works, and seventy-three prizes were awarded, including one to Dr. J. O. Fitzgerald, Richmond, for his photograph of "Three Jonquils". The estimated attendance at this exhibition was 15,000 and it was proclaimed the most attractive of the entire convention.

Dr. Edward M. Holmes, Jr.,

For the past several years director of the division of venereal disease control of the State Department of Health, has received a commission as Captain in the Medical Corps of the U. S. Army and been assigned as veneral disease control officer at Randolph Field in Texas.

Dr. W. E. Baker, who has been assistant to Dr. Holmes for the last several months, will take over his work for the duration of the war.

Dr. Hugh C. Henry,

Richmond, director of State hospitals, has been appointed by Governor Darden as Commissioner of Mental Hygiene and Hospitals of Virginia.

Dr. C. W. Rodgers,

Formerly of Staunton, is now associated with Drs. W. Clyde West and J. C. McCluer at 520 Prince Street, Alexandria.

Dr. E. G. Gill

Was recently elected a member of the Board of Trustees of the Roanoke City Library. He is also chairman of the Advisory Board of Health of the City of Roanoke.

Married.

Lt. Joseph Lee Mann. MC., and Miss Nan West Phillips, Hampton, June 19. Dr. Mann practiced at Hampton before entering the Service but is now stationed at Carlstrom Field, Arcadia, Fla. He is a graduate of the University of Virginia in 1938.

Dr. Gray C. Hughes, Martinsville, and Miss Meta Inman, Kingstree, S C., June 6. Dr. Hughes is a graduate of the Medical College of Virginia, class of 1934.

Dr. Thomas Paul O'Brien, Benwood, W. Va., and Miss Jacqueline Weeks, Crewe, July 13. Dr. O'Brien graduated from the Medical College of Virginia in 1941.

Dr. Joseph Lawson Platt, Emory, and Miss Louise Amonette Davis, Lynchburg, June 27. Dr. Platt received his medical degree from the University of Virginia in 1941.

Lt. Phillip Cocke Trout, MC., and Miss Bettie Ruth Reynolds, Shawsville, July 1. Dr. Trout is a son of Dr. Hugh H. Trout, Roanoke.

Dr. M. H. McClintic, Roanoke, and Miss Kathryn Meador, Bedford, June 20. Dr. McClintic is a graduate of the Medical College of Virginia in 1933.

Dr. Charles Edward McKeown, Richmond, and Miss Margaret Parker, Alexandria, July 3. Dr. McKeown is a graduate of the University of Wisconsin and is serving an internship at the Medical College of Virginia hospitals.

Dr. William Elgin Harman, Floyd, and Miss Elizabeth Jane Hivick, Harrisonburg, December 20, 1941. Dr. Harman received his medical degree from the University of Virginia in the '42 class.

The Tidewater Victory Memorial Hospital,

Near Norfolk, has been taken over as a State institution. This tuberculosis sanatorium was completed five years ago and has been operated with funds raised for the most part from private citizens.

Colonel Daniel Parker Card,

U. S. Army, Medical Corps, retired, has been appointed post surgeon of V. M. I., replacing Dr. Hunter McClung, Jr., who is in active service with the Army Medical Corps.

Dr. F. B. Zimmerman

Recently completed a residency at the Gill Memorial Eye, Ear and Throat Hospital, Roanoke, and is now resident at the General Hospital, Louisville, Ky.

Dr. Albert G. Schnurman,

Recently of Radford, is now located for practice in the Shenandoah Life Building, Roanoke.

The American Congress of Physical Therapy

Will hold its 21st annual scientific and clinical session September 9-12 at the Hotel William Penn, Pittsburgh. All sessions will be open to the members of the regular medical profession and their qualified aids. For information, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

Dr. Percy G. Hamlin

Has been promoted to the grade of Lieutenant-Colonel in the Medical Corps of the U. S. Army and is now located at Camp Ritchie, Maryland. He has been on duty at the Hoff General Hospital, Santa Barbara, California, as chief of the neuropsychiatric section for the past fourteen months. Dr. Hamlin is a graduate of the Medical College of Virginia and for a number of years practiced in Virginia.

Dr. Glenn H. Baird,

Assistant Surgeon, U.S.P.H.S., has been assigned

to serve as venereal disease control officer of Richmond and has already assumed his duties.

Dr. Elizabeth M. Cover

Has located at Luray where she will be engaged in general practice and surgery. She received her medical degree from the University of Virginia in 1937 and completed her training at the Woman's Hospital of Philadelphia and the Graduate School of the University of Pennsylvania.

Dr. S. C. Cox,

Kerr, N. C., is now a Captain in the Medical Corps with the 1326th Service Unit, Station Hospital, Camp Lee. He is a graduate of the Medical College of Virginia in 1934.

Dr. William L. Taliaferro,

Norfolk, has recently been promoted to the rank of Captain and is now located with the 51st Medical Battalion, Camp Blanding, Fla.

The American Gynecological Society

Held its annual meeting of Skytop Lodge in the Pocono Mountains of Pennsylvania in June, just following the American Medical Association meeting, under the presidency of Dr. William C. Danforth of Evanston, Ill. Dr. George W. Kosmak of New York City was elected president for the coming year, and Dr. Howard Taylor, Jr., of New York and Dr. Philip Williams of Philadelphia were re-elected secretary and treasurer, respectively.

Army Hospital at Staunton.

It has been announced that the 1,000 bed Army General Hospital to be erected east of Staunton will have the name of Woodrow Wilson who was a native of that city. The hospital will consist of approximately 100 buildings and the mapping of plans for the layout has been under way for some time.

Columbia University,

New York City, announces that beginning September a program of professional studies for the training of physical therapy technicians will be offered. This training and instruction will extend over a two-year period and has been organized in compliance with the requirements set down for such programs by the Council on Medical Education and Hospitals of the A. M. A. Information may be obtained by writing the Office of the Committee on Physical Therapy, Room 303B, School of Business, Columbia University, New York City.

The American College of Physicians

Has announced its 27th annual session to be held in Philadelphia, April 13-16, 1943. Dr. James E. Paullin, Atlanta, as President of the College, will have charge of the program of general sessions and lectures, and Dr. George Morris Piersol, Philadelphia, general chairman, will be responsible for the program of hospital clinics, panel discussions, local arrangements, entertainment, etc. Mr. E. R. Loveland, Philadelphia, is executive secretary of the College.

The Leslie Dana Gold Medal,

Awarded annually for outstanding achievements in the prevention of blindness and the conservation of vision, will be presented this year to Lewis H. Carris, Director Emeritus of the National Society for the Prevention of Blindness. He was for two decades managing director of the Society, having retired in 1939.

Deaths of Doctors in 1941.

The average age at death of physicians in the United States in 1941 was 65.9 as compared with 66.3 in the previous year. Last year there were 3,527 obituaries published in the *Journal of the American Medical Association* of June 13. Heart disease was again the leading cause of death. There were 152 accidental deaths, 83 of these being from automobile accidents. Suicides accounted for 67 deaths.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Barker, L. F.—Time and the physician; autobiography of L. F. Barker.
Briggs, L. V.—Smoke abatement.
Chadwick, H. D.—The modern attack on tuberculosis.
Davis, L.—Principles of neurological surgery.
Howe, H. A.—Neural mechanisms in poliomyelitis.
Jolly, D. W.—Field survery in total war.
Kardiner, A.—The traumatic neuroses of war.
Kovacs, R.—Electrotherapy and light therapy.
Kuntz, A.—The autonomic nervous system.
Lanza and Goldberg—Industrial hygiene.
Macy, I. G.—Nutrition and chemical growth in childhood.
New York Academy of Medicine—Preventive medicine in modern practice.
Newman, H. W.—Acute alcoholic intoxication.
Nyswander, D. B.—Solving school health problems.
Prentiss, A. M.—Chemicals in war.
Pseudo-Isochromatic plates for testing color perception.

Raney, R. B.—A primer on the prevention of deformity in childhood.
Steinbrocker, O.—Arthritis in modern practice.
Thompson, C. J. S.—The history and evolution of surgical instruments.
Thorndike, A., Jr.—A manual of bandaging, strapping and splinting.
University of Wisconsin—A symposium on respiratory enzymes.
van Liere, E. J.—Anoxia, its effect on the body.

Diathermy Apparatus Should Be Registered.

If you have any diathermy apparatus and have not registered it with the government this should be done at once. The F.B.I. has demanded this registration because these machines can be converted into short-wave transmitters and some of them have actually been used to transmit signals to the enemy. Forms for this registration may be obtained from the Federal Communications Commission, Washington, D. C.

Wanted.

Would appreciate knowledge of a location in Virginia where a physician is needed. Prefer northern or Shenandoah Valley sections of State but would consider other places. Previous practice in Virginia, white, age 61, Protestant, capable and well qualified. Recommendations in both Massachusetts and Virginia. Address C. W. Robertson, M.D., Montague, Massachusetts. *(Adv.)*

For Sale—

Truvision Stereoscope made by General Electric, mounted on adjustable floor stand, complete with 125 volt rheostat. In use three years; excellent condition. Price $195.00 f.o.b. Radford, Virginia. James P. King, M.D., Radford, Va. *(Adv.)*

For Sale.

Complete set of Tice's Practice of Medicine, kept up to present date; Boehm's electric combination stethoscope and tongue depressor; McCaskey bookkeeping system; and several other miscellaneous instruments. Prices reasonable. Owner deceased. Address "Instruments", care the VIRGINIA MEDICAL MONTHLY. *(Adv.)*

Obituaries

Dr. Marvin Everette Nuckols,

Prominent Richmond physician, died July 21st following a long illness. He was sixty-five years of age and graduated from the former University College of Medicine, Richmond, in 1897. Dr. Nuckols had practiced in Richmond since his graduation and at one time served as associate professor of surgery at the Medical College of Virginia. He was a Mason and held membership in many fraternal and social organizations. Dr. Nuckols joined the Medical Society of Virginia in 1898. Two sons survive him.

Dr. Arthur Blackwell Cosby,

Big Island, died June 26th, at the age of seventy. He was a graduate of the Medical College of Virginia in 1895 and practiced in Richmond for more than twenty years before locating at Big Island. Dr. Cosby was a member of the Medical Society of Virginia. His wife and three children survive him.

Dr. William McCully James,

An authority on tropical diseases and a pioneer physician to Panama, died in the Canal Zone on July 10th. He was a native of Richmond and sixty-two years of age. Dr. James graduated in medicine from the University of Virginia in 1906.

Dr. John R. Shannon,

Well known ophthalmologist, died at his home in Richmond on July 4th. He was seventy-eight years of age and practiced in New York City until his retirement several years ago.

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A comprehensive review of the physics and higher mathematics involved, film interpretation, all standard general roentgen diagnostic procedures, methods of application and doses of radiation therapy, both x-ray and radium, standard and special fluoroscopic procedures. A review of dermatological lesions and tumors susceptible to roentgen therapy is given, together with methods and dosage calculation of treatments. Special attention is given to the newer diagnostic methods associated with the employment of contrast media, such as bronchography with Lipiodol, uterosalpingography, visualization of cardiac chambers, perirenal insufflation and myelography. Discussions covering roentgen departmental management are also included.

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MEDICINE—Two Weeks Intensive Course will be offered starting October 5th. Two Weeks Course in Gastro-Enterology will be offered starting October 19th. One Month Course in Electrocardiography and Heart Disease every month except August and December.

FRACTURES & TRAUMATIC SURGERY—Two Weeks Intensive Course will be offered starting September 21st. Informal course available every week.

GYNECOLOGY—Two Weeks Intensive Course will be offered starting October 5th. Clinical and Diagnostic Courses every week.

OBSTETRICS—Two Weeks Intensive Course will be offered starting September 21st. Informal Course every week.

OTOLARYNGOLOGY—Two Weeks Intensive Course will be offered starting September 14th. Clinical and Special Courses every week.

OPHTHALMOLOGY—Two Weeks Intensive Course will be offered starting September 28th. Five Weeks Course in Refraction Methods starting October 19th. Informal Course every week.

ROENTGENOLOGY — Courses in X-ray Interpretation, Fluoroscopy, Deep X-ray Therapy every week.

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Mead's Brewers Yeast contains the entire vitamin B complex, including thiamine, riboflavin and nicotinic acid. It may be given in tablet form and/or in powder form. The powder may be quickly shaken up with milk in an ordinary cocktail shaker. It also mixes well with tomato juice or ketchup.

Each Mead's Brewers Yeast Tablet contains not less than .06 mg. thiamine (vitamin B_1), .02 mg. riboflavin (vitamin G), and .15 mg. nicotinic acid, together with other factors of the vitamin B complex commonly occurring in nonviable brewers' yeast.

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VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

VOL. 69. September, 1942 NO. 9.

CONVENTION NUMBER
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Annual Meeting—Medical Society of Virginia
Roanoke, October 5, 6 and 7, 1942

Come and get it!

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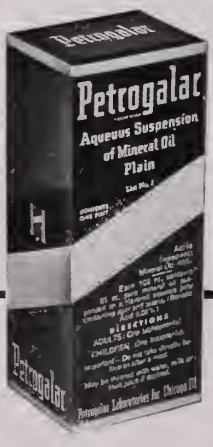

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Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 69, No. 9.
WHOLE No. 1083.

RICHMOND, VA., SEPTEMBER, 1942.

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Guest Editorial

Diethylstilbestrol Accepted for Inclusion in New and Nonofficial Remedies

DIETHYLSTILBESTROL (4, 4[1]–didydroxy–α, β–diethylstilbene) which was released into commerce early last autumn by the Food and Drug Administration, recently was found acceptable by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies (Report of the Council, J.A.M.A., 119:632, June 20, 1942). Diethylstilbestrol has been available commercially in Canada and Europe since 1939 but it was not certified for sale in this country until a most widespread investigation had indicated that it possessed no significant toxicologic potentialities.

The Council on Pharmacy and Chemistry certifies as approved uses for diethylstilbestrol those previously recognized for hormonal estrogens: 1) for the relief of subjective climacteric symptomatology; 2) for the treatment of senile vaginitis, gonorrheal vaginitis of childhood and of kraurosis vulvae; and 3) for the suppression of lactation and for the treatment of painful engorgement of the breasts. The Council failed to recognize the use of estrogens in disorders of uterine bleeding because of "lack of satisfactory evidence as to the benefit obtained from such therapy". Likewise, it did not approve officially the use of estrogens in the treatment of deficient sexual maturation resulting from adolescent ovarian failure. The contraindication, which is mentioned for diethylstilbestrol in common with other estrogens (New and Nonofficial Remedies, J.A.M.A., 119:635, June 20, 1942), is its use in the presence of a "familial or personal history of malignancy of the reproductive organs".

Empiricism and symptomatic therapy, preceded by an absence of or a paucity of diagnostic endeavors, have been all too common occurrences in the practice of clinical endocrinology. Cautious supervision by the capable members of the Food and Drug Administration may assure the absence of any untoward toxicology of any new pharmaceutical and the Council on Pharmacy and Chemistry may list approved uses and recommend dosages but the responsibility for the rational and effective application of new specific pharmacologic principles such as diethylstilbestrol rests squarely upon the shoulders of the individual physician. Whereas pills of dried ovaries of the past might be given empirically with little harm and no good resulting, therapeutic carelessness of this sort is fraught with grave dangers when active chemical substances of the diethylstilbestrol class are used.

In view of these considerations the present time seems particularly appropriate for discussing and annotating the uses and dosages of diethylstilbestrol as recommended by the Council on Pharmacy and Chemistry and for adding a few personal thoughts on the uses and limitations of diethylstilbestrol.

By no means should the climacteric be regarded as a universal indication for estrogenic therapy. Dosages employed in the treatment of the climacteric woman are commonly too large. As a result not infrequently this stage of sexual aging is delayed and troublesome uterine hemorrhages result. These complications have increased in frequency since the commercial availability of diethylstilbestrol. The average daily dose of diethylstilbestrol recommended in New and Nonofficial Remedies for use during the climacteric is 0.5 to 1.0 mg. It has been the experience of many that dosage schedules of this order will produce bleeding in the woman past menopause. Postmenopausal bleeding worries the physician and alarms the woman because it is recog-

nized commonly to be a symptom of cancer. We are not sure that this abnormal stimulation of the senile endometrium might not favor the genesis of carcinoma.

The specific bactericidal effects of the "sulfa" drugs have rendered unnecessary the contraphysiologic use of estrogens in gonorrheal vaginitis. Too frequently in the past overdosage with estrogens has produced undesired symptoms of pubertas praecox.

The use of estrogens in senile vaginitis should be cautious and dosages should be kept at a level insufficient to cause endometrial stimulation.

The real value of estrogens in the treatment of kraurosis vulvae has not been established. Kraurosis vulvae may progress into carcinoma. Estrogens may facilitate this progress. The best treatment for kraurosis vulvae remains surgery.

Suppression of lactation and the treatment of painful engorgement of the breasts have been carried out satisfactorily for years without recourse to estrogenic therapy. The puerperium is a critical time as regards endocrine readjustments. All too frequently ovarian failure has its genesis in the puerperium. The employment of the Council recommended average daily doses of 15 mg. of diethylstilbestrol for the suppression of lactation may increase the incidence of puerperal ovarian failure since it is well known that diethylstilbestrol depresses ovarian function.

The two most promising and striking applications of estrogenic therapy in gynecologic practice, which incidentially have been made practical by the commercial availability of the orally active and cheap non-hormonal diethylstilbestrol, are in the treatment of prolonged and excessive bleeding of a functional nature and in the treatment of sexual underdevelopment due to intrinsic ovarian failure.

It is our personal opinion that the ability to stop excessive uterine bleeding and subsequently to regulate the cyclicity of bleeding by estrogenic therapy represents one of the major contributions of endocrinology to gynecic practice. It permits the conservative handling of this troublesome condition in the young woman without recourse to function-destroying surgery, radium or roentgen therapy and without precluding the possibility of full recovery of a degree of ovarian function compatible with fertility if conservative measures be continued.

The cosmetic inelegance imposed by absence of or incompleteness of sexual development originating because of intrinsic failure of the ovaries during adolescence may be circumvented cheaply and effectively by diethylstilbestrol. Unfortunately, however, these individuals remain sterile because we have no method for substituting for the absent gametogenic function of the ovaries.

Recently considerable optimism has arisen among the urologists regarding the treatment of carcinoma of the prostate. The contrasexual use of diethylstilbestrol has been reported of extreme value in this condition probably due to its antagonistic effects on testicular function and possibly also due to its direct effects on associated osseous metastases. This employment of diethylstilbestrol represents an exception to the previously announced contraindication on the basis of a personal history of a malignancy of the reproductive organs. Caution should be expressed at this point to the effect that there are no grounds for assuming that diethylstilbestrol is of value in the treatment of carcinoma of the cervix and carcinoma of the uterus. In fact, no estrogenic therapy should be given for genital hemorrhage until the presence of these two conditions has been ruled out.

Accordingly we may welcome diethylstilbestrol as a potent, orally active and economically feasible non-hormonal estrogen. It has a bright therapeutic future if it be employed rationally and critically. Its empiric and careless use may provoke untold harm. Its prolonged use and the employment of large doses should be countenanced only when the patient treated is under competent medical supervision. Diethylstilbestrol should continue to be dispensed only upon a physician's prescription.

—E. C. HAMBLEN, M.D.*

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TREATMENT OF OCULAR INJURIES*

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Today, the realization of the need of greater knowledge on the proper care of the wounded is foremost in the minds of all medical men. Our interest in traumatic surgery has been kindled anew. Judging from the experience of our British colleagues ocular injuries occur with surprising frequency as the result of air raids. For example, during the fall of 1940 one London ophthalmic hospital treated 250 cases of ocular injuries (including foreign bodies) in a single night. Our increased rate of production also will add its share to the estimated 315,000 eye injuries occurring annually in this country. The National Health Survey indicated that there are 425,000 persons in the United States blind in one eye. Of the cases studied 51.9 per cent were caused by accidents, 19.1 per cent by occupational accidents. According to research the total compensation cost to industry itself of these preventable injuries is believed to be more than $100,000,000, but only 20 per cent or 60,000 of these eye injuries are compensable, and it is estimated that the cost of the 240,000 so-called trivial eye injuries is more than $10,000,000 a year. Furthermore, it is said that accidents account for one-fifth of the entire amount of blindness. With these thoughts in mind I felt the treatment of ocular injuries would be a suitable topic for discussion.

INJURIES OF THE EYELIDS

Such injuries may take the form of contusions, lacerations, tears and burns. Contusions are best treated by rest and cold compresses of boric acid or of lead and opium lotion. Lacerations may be broadly classified into horizontal and vertical. The horizontal ones take the general direction of the fibres of the orbicularis palpebrarum muscle and do not tend to gape. They usually heal without appreciable scar formation and require few if any sutures. Vertical wounds tend to gape widely from the traction of the orbicularis muscle and if serious deformity of the lid is to be avoided careful attention must be given. Primary suture is the best treatment and accurate apposition of the lid margins must be secured. Otherwise, an artificial coloboma or notch will result. The technique used to repair this type of wound is a surgical problem worthy of repetition.

The halving procedure as described by Wheeler is the operation of choice. The important point in this operation is that the tarsal incisions and skin incisions should never be in the same position, but should be made in such way that there is overlapping. The amount of tarsus excised should be as great at the upper end of the incision as at the lower. This tends to produce a temporary over-correction of the defect which guards against a recurrence of the notch.

Another frequent type of injury is a laceration or tear of the lower lid near the inner canthus. These wounds usually result in a bad deformity with a destruction of the lower canaliculus. The inner end of the lower lid is carried down and away from the globe, leaving a small space in which the tears accumulate. Repair of this type of injury calls for proper suturing of the lower lid to maintain its contact with the globe. This can only be secured by carrying the lid flap up and well back. The tip must be relieved of all tension even if a canthotomy has to be performed. In the late repair of this type of deformity all scar tissue must be excised and a sliding flap extending well beyond the outer canthus used to insure ample release of tension on the tip. Preservation of function of the lower canaliculus should be attempted by uniting its cut end to the lacrimal sac. Patency of this canal can sometimes be established by the use of a thread passed through the canaliculus into the lacrimal duct and out through the nose. This suture is left in place for two to three weeks and its position is shifted daily. Perforating wounds of the lids are not in themselves serious unless some of the deeper structures are injured since they usually heal without becoming infected.

In all cases of injury to the lids the possibility of underlying fracture should be considered and excluded by careful palpation and x-rays. Emphysema of the lid indicates rupture of the nasal air cells and should be treated as a contusion with special avoidance of blowing the nose. A distressing sequela of fractures of the floor of the orbit is an enophthalmos which often does not make its ap-

*Read by invitation before the Richmond Academy of Medicine, Richmond, Va., May 12, 1942.

pearance until several weeks after the accident. In 15 such cases x-ray examination has shown a fracture of the floor of the orbit with herniation of the orbital fat in the antrum.

Burns of the eyelids constitute one of our most serious problems. First degree burns heal without difficulty, but second and third degree burns produce severe cicatrization with all its attendant problems. The immediate care of severe burns is that of protection of the globe. Non-irritating oils and ointments are indicated. The final care will depend upon the sequelae. If the ectropion is not too extensive it can be corrected by a free graft from the upper lid of the contralateral side. Often times the severity of the accompanying facial burns precludes the use of any but epidermal grafts.

INJURIES OF THE GLOBE

Contusions of the globe are often followed by intraocular hemorrhage and should be treated with complete rest, cold compresses, and frequent instillations of atropine sulphate solution 1 per cent to guard against the development of a traumatic iritis. The treatment of the more serious complications of dislocation of the lens, commotio retinae and detachment of the retina, etc., are not within the realm of this discussion. Conjunctival lacerations often heal spontaneously and require suturing only if there is a wide separation of the edges of the wound. Subconjunctival hemorrhage should be treated with cold compresses for the first forty-eight hours after which time absorption of the blood may be hastened by the use of heat. Conjunctival foreign bodies usually lodge under the upper lid and their removal is easily affected after eversion of the upper lid. In the search for a foreign body it is well to remember that a cilium may become lodged into the upper or lower punctum and be readily overlooked.

The most common type of eye injury is a foreign body embedded in the cornea. It is an experience we have all had and one which every physician is forced to treat at some time during his career. The two essentials in the management of such a case are, first, good illumination; second, local anesthesia. Concentrated light which can be shifted across the cornea is essential for the detection of small particles, as is sufficient magnification to assist those of presbyopic age. A local anesthetic to be recommended in place of cocaine is pontocaine hydrochloride ½ per cent, a drop or two of which produces a rapid and satisfactory superficial anesthesia. Another drug without which every ophthalmologist would feel lost is fluorescein.[4] A drop of a 1 per cent aqueous solution stains any break in the conjunctival or corneal epithelium a brilliant green. Its use should be routine after the removal of a corneal foreign body, because any break in the corneal epithelium may, if neglected, lead to serious complications. It is my practise to protect all eyes with corneal abrasions until no staining exists. Such a case receives a liberal amount of 5 per cent sulfathiazole ointment into the lower conjunctival cul de sac and a firm protective dressing. In my opinion the continued use of a local anesthetic without a dressing predisposes the eye to infection, the one complication we all fear in a corneal foreign body. The treatment of corneal ulcers is too technical to permit of discussion, but those of us who encounter these cases realize the imortance of prophylaxis.

The immediate removal of multiple foreign bodies in the cornea is sometimes unwise for the manipulation necessary for their removal may do more harm than good. A protective dressing and removal of the more prominent ones is often sufficient.

Many foreign bodies strike the eye with sufficient force to penetrate the globe. Never forget that a small corneal laceration may have been the site of entrance of a foreign body. An absent or shallow anterior chamber with a reduction in the intraocular pressure and displaced pupil are definite signs of perforation. The history is often misleading for one must bear in mind that these accidents occur so quickly the patient does not realize what struck him. In all such suspicious cases a protective dressing and prompt x-ray examination are indicated. Recent refinements in x-ray technique often enable us to disclose even fragments of glass within the globe. All cases of intraocular foreign bodies require the care of a competent roentgenologist and ophthalmologist. Penetrating wounds of the globe of any kind should receive similar treatment. According to Joy's studies, sympathetic ophthalmia occurs in 5 per cent of all cases of penetrating wounds of the eyeball. The treatment of this disease, once it has arisen, is most discouraging, so every physician should be aware of its possibility and cooperate with the attending ophthalmologist in its prevention. This usually means the prompt removal of hopelessly injured eyes, as well as those

with extensive lacerations in the region of the ciliary body.

The treatment of burns of the conjunctiva and cornea is extremely unsatisfactory. The immediate care of chemical burns should consist of copious irrigation with any clean non-irritating solution, care being taken that the folds are well everted so that the whole surface of the conjunctiva is thoroughly cleansed and no particles of lime or other chemical remain adherent to it. The dispatch with which such irrigation is used is more important than the kind of solution employed. Attempts at neutralization of the chemical are usually unsuccessful. Burns with sulphur dioxide and other refrigerants are best treated with repeated instillations of olive oil as these chemicals are usually insoluble in water. Mustard gas is active only in the presence of water, so should be treated with a bland oil. Thies recommends for severe burns of the conjunctiva immediate grafts of mucous membrane after thorough excision of the necrotic conjunctiva. I have had no experience with this radical treatment, but conservative measures have been so unsatisfactory that it is worthy of consideration. Among the sequelae of severe burns are adhesions between the lids and globe (symblepharon), extensive corneal opacification with vascularization and secodary glaucoma. The management of all these conditions is almost hopeless. Corneal transplantation is usually not satisfactory in the presence of highly vascularized cicatricial tissue such as is seen in old chemical burns.

30 West 59th Street.

THE EFFECT OF WAR ON THE MENTAL HEALTH OF CIVILIAN POPULATION*

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This is Total War. Fitness of the civilian population is of equal importance with fitness of the fighter. The outcome of the war depends upon the staying power of the civilian population as much as upon that of the sailor and soldier. With this thought in mind, let us consider what effect war may have on the civilian population.

During the two decades of uneasy peace which have elapsed since the end of World War I, substantial progress has been made by the social sciences and among them psychiatry. Much has been learned about human motivations and we have made a reasonable beginning to the task of controlling certain aspects of human behavior. We know a good deal more about such matters as insecurity, frustration and the effects of conflict.

It is only too clear, of course, that this *series of social disorders* which is constituting *current history* must be ascribed in overwhelming measure to the failure of social invention to keep pace with material invention. Nonetheless, we have started to make progress in our attempts to understand and control human behavior, and it is certain that the only sure way out of the crumbling, dangerous social world in which we are trying to live is by doubling and redoubling our efforts to learn more and to apply more of what we learn concerning human nature. With the gains already made, however, we can even now approach the problems which are arising in the present war, with more hope of dealing adequately and actively with them than was the case twenty years ago.

Prior to the present conflict our knowledge of warfare has been confined to its political, economic and military aspects. We have not, until lately, studied it as a sociological phenomenon. Our studies of this aspect of warfare are still in their preliminary stages. These studies, though somewhat removed from the individual problems with which we deal as psychiatrists, are important since they tend to provide us with knowledge concerning the large sociological forces which operate during warfare and which by their action upon the individual predispose to those clinical reactions with which we are familiar.

From our point of view, one of the most important analyses of warfare is that which demonstrates the existence of various stages in the development of a war. The following phases have been described: first, a period of provocation; then what has been termed the "milling around" phase; following on this come the first stages of actual warfare, and,

*Read before the joint session of the Mental Hygiene Society of Virginia and the Virginia Conference of Social Work at Richmond, April 24, 1942.

finally, the later stages during which war-weariness appears.

These stages are of interest since certain of them appear to influence fairly definitely the type of behavioral disorder which is shown by individuals who develop breakdowns during these various phases.

Period of Provocation. This period, as far as we yet know, appears to exert comparatively little influence upon the nature of the breakdowns which occur during its existence. It is a period during which antagonisms between national groups increase and during which an increasing awareness of the possible harmfulness of the opposing national group becomes apparent.

Period of Milling Around. A good deal of indecision and insecurity characterize this phase. Public opinion is confused and there is consderable friction between conflicting groups. As a result of this insecurity, anxiety states tend to be promoted. Individuals hesitate to take on new responsibilities. During this period breakdowns may begin to appear in minority groups. These breakdowns are more frequent in predisposed persons, but they tend to be colored by the circumstances, and paranoid reactions take on a typical persecutory form. By this is meant that those individuals who develop persecutory manifestations tend to exhibit delusions concerning spying and sabotage to a greater extent than is usual during more peaceful times. Manic-depressive and schizophrenic reactions may be precipitated in those who have shown previous similar attacks, but there is as yet little evidence that such attacks may be produced in individuals who have not shown predisposition.

Early Stages of War. During this phase morale is high and breakdowns may actually be reduced. Those which do occur take place, as a rule, in persons who are predisposed or who, while being called upon for extra effort, are subjected to the well meaning but often misdirected solicitude of their friends and medical advisers. Experiences in the present conflict, as in the first World War, have demonstrated that the incidence and the course of psychoneurotic reactions are much influenced by the way in which such reactions are regarded and dealt with by the group. Where there is general belief and frequent statement that the current stress is unendurable and where a diagnostic description satisfactory to the individual's self-regard is commonly used to designate psychoneurotic symptoms, for example, "Shell Shock", then the incidence of psychoneurotic reactions becomes high. If war neurosis is accepted and glorified, as was done at times during the last war, the incidence will increase. At one time during World War I, the British Army gave wound stripes for shell shock, and it did not take them long to realize that that was a serious mistake. The frequency of the condition increased enormously. On the other hand, precisely the same degree of danger and insecurity may be faced without breakdown if the group is permeated with enthusiasm and confidence and if psychoneurotic reactions are regarded as evidences of insecurity. In an aggressive enthusiastic civilian population, thinking in offensive action, acclaim is naturally accorded to the fitness and adequacy of the individual which allows him to make his contribution to the common good. The maintenance of this fitness and adequacy is considered not only praiseworthy but a duty.

Period of War-Weariness. During this period morale begins to fall; apathy and pessimism occur; and the rate of breakdowns increases considerably. As this phase becomes more pronounced the various addictions begin to increase.

There are numerous factors which produce abnormal behavioral patterns during war. At present the emphasis is placed upon the fears which are associated with warfare. There is little doubt, however, that further inquiry will show that such factors as frustration increase demands upon the individual's capacity to adjust, and the loss of satisfying social institutions may be of considerable importance. It has been pointed out in various studies that the main sources of the individual's fears during war are (1) fears of physical danger; (2) fears regarding the economic future; (3) fears concerning the break-up of the family group, and (4) fears of starvation. Mira, in 1939, pointed out that the latter fear proved more serious in the Spanish Civil War than did even the fear of bombing.

The fear of actual physical danger has in the present conflict assumed an importance in the civilian population which it did not formerly possess. Never before in all the history of wars has any large proportion of the civilian population been subjected to mass killing. This practice of bombing civilian areas has resulted in large numbers of individuals being exposed to danger of injury and death under circumstances which are particularly trying, since the in-

dividual himself can take little aggressive action against the enemy. Among the traumatic experiences which have to be considered are not only actual wounds, but the matter of being struck by blast and being buried in the wreckage of bombed buildings. Under the circumstances, the number of psychiatric casualties among the civilian population must be considered astonishingly low. Gillespie, in his "Psychological Effects of War on Citizen and Soldier," points out that one of the most striking things about the effects of the war on the civilian population of England is the relative rarity of pathological mental disturbances. Most of the disturbances that have occurred have been seen as a rule only in the predisposed, though occasionally seen in others after repeated exposure to terrifying experiences or after an unusually terrifying experience. As would be expected, previously existing mental conditions can be accentuated by experiences of air raids. Yet, surprisingly, some individuals with chronic psychoneurotic conditions have shown symptomatic recovery as a result of living and working under a blitz. Dr. Gillespie notes that, in war, two emotions that are characteristic of the British stand out prominently; infinite patience, and pity that only slowly turns to anger. There is also a detachment, and that is important in civilian morale: but the mainspring of the quiet endurance of the ordinary man in Britain is his pride and the knowledge that he is free. Finally, he is an idealist and has a positive aim. It remains to be seen whether our very heterogeneous American citizenry, with large proportions of Latin, Slovak, and African types will display similar fortitude in the trying months to come.

The types of reactions produced by physical danger are mainly anxiety states, the majority of which respond rapidly to treatment, and hysterical reactions which are rather more resistant although responding more readily than do those hysterical reactions which occur during peacetime. Another factor creating fear in the individual is enemy propaganda. This must be reckoned with as a serious factor in the present conflict. The advances of the social sciences have been used by the various belligerent countries to develop psychological weapons which have been used with considerable success. Bion, who has reported upon the "War of Nerves" at some length, states that it consists in an attempt to distract the individual from real dangers by creating phantasies in his mind which produce fear and guilt. He goes on to stress the contrast between the situation of the soldier who has been organized into a compact unit, the members of which can be certain of the support of the whole group, with the civilian who in certain areas, particularly, may be relatively isolated in the sociological sense. In general, the objectives of psychological warfare are: (1) to increase conflict between groups within the population of the opponent; (2) to produce anxiety and fear states particularly among key persons, and (3) to produce apathy and disillusionment among the population in general. Since these are matters which are in themselves of direct interest to us as psychiatrists and mental hygienists, and since they tend to form the basis of individual breakdowns, particularly into the more familiar psychoneuroses, it is of importance to consider them further.

It may be said at once that these objectives have been sought in previous wars. The present period is exceptional only in so far that these objectives are pursued much more assiduously and with better techniques than during earlier conflicts. Then, too, in other wars rapid means of communication were not so readily available. Radio has been developed since World War I.

The techniques of producing fear and anxiety which have been developed during the present period are so well known that it is necessary to do little more than mention the use of rumors and the use of the crisis during the period which antedates actual warfare. The techniques of these procedures and their paralyzing results are well described from the laymen's point of view by Taylor, who had occasion to observe them in France. The bombings of cities is made the more terrifying by the use of screaming and time bombs. Attempts are made to increase this effect, in turn, by hints and threats that these are merely the beginning. A further method of producing fear and insecurity has consisted in the negation and destruction of those social institutions which have gradually come to symbolize a growing trust between peoples and which have served as an indication of their integrity and reliability. The breaking of treaties, invasion without warning, the destruction of long revered centers of learning, and the denial of the inviolability of such ancient institutions as the Church and the home, are some of the steps taken to create fear and insecurity.

To create apathy and disillusionment, confused and contradictory reports are issued through vari-

ous propaganda organs, the purpose of this being gradually to break down the confidence of the population in all sources of information. By the use of agents and sympathizers contradictory and useless orders are given so as to create increasing distrust among the population towards those in authority. This procedure was apparently used with great effect in France during the last few weeks before capitulation.

Fatigue or exhaustion has been recognized as a contributory factor in behavioral breakdowns in earlier conflicts. Its importance in the present type of warfare has not yet been fully assayed. It would seem that exposure to frequent bombings with consequent interference with sleep, as well as the attendant difficulties created by uncertain meals and disrupted communications may well act as very definite predisposing factors. Such states of behavioral breakdown due to exhaustion were not infrequently reported during World War I.

There is yet little information concerning the effects of defective diet in producing behavioral changes in civilian population. Mira reported that starvation and fear of starvation were more serious factors than bombing in Barcelona during the Spanish Civil War, and the breakdown of the morale of the German population during 1917-1918 has been ascribed in large measure to food deficiency. It is worthy of note that during the present conflict great care is being exercised by the belligerent governments to assure an adequate diet with special emphasis upon the necessity of its containing Vitamin B_1.

The reactions which occur in the civilian population as a result of the factors described may be classified into three main groups: (a) Psychoses; (b) Psychoneuroses; (c) Community Disorders.

Psychoses. Precise figures regarding the effects of the present war stress upon the incidence of psychoses are not yet available. From a study of the reports upon the occurrence of psychoses in the various armies during the first World War, it would appear that there was little actual increase. It must be borne in mind, however, that this does not of necessity throw any final light upon what may be found to happen in the civilian population. The armies of the first World War were picked bodies of men, and it is of interest to note that the greater the care which was exercised in selecting men for these armies the lower was the incidence of psychiatric casualties. In attempting to assess the effects of war stress upon the incidence of psychoses in the civilian population care must be taken to exclude those cases in which war derived ideas, such as those centering about spying and sabotage, are simply incorporated into a general paranoid. tendency. There are reports available concerning a few psychotic breakdowns in which war stress seems to have been a precipitating factor, but in these cases there were in addition serious predisposing causes. Mention has already been made in this report of Doctor Gillespie's findings in England.

Psychoneuroses: When we consider the psychoneuroses we find that war time stress results in a definite increase in these types of reactions. This fact first became clearly apparent in World War I. A growing number of reports are available concerning this type of breakdown in the Spanish Civil War and in the present conflict. It has been observed that while these reactions may at times seem to appear suddenly, they are usually preceded by prodromal symptoms of which it is important to be aware. Some of these symptoms are fatigue, increased resort to tobacco or alcohol, growing irritability or moodiness, loss of interest and emotional crises. There appear to be differences in these symptoms which vary with the type of psychoneurosis which later develops. Anxiety attacks are preceded by fatigue, tension, restlessness and irritability, while the hysterical type of reaction is more apt to be preceded by resentment, grumbling and a strong desire to escape from the situation.

The anxiety states have made up by far the most common type of psychoneurotic reactions in the civilian population under moderan war time stress. Two general categories have to be considered—first, the individuals who showed anxiety reactions prior to exposure to war stress. In general, their condition becomes worse under war stress, though some actually improve. More acute anxiety reactions among individuals in the civilian population have occurred when their cities were subjected to intense bombings. In these acute reactions the clinical picture shows signs of physical exhaustion and collapse, the expression being one of either tension or listless apathy. These patients suffer from considerable sleeplessness and are readily startled by noises or by any sudden occurrence.

Mira has described a malignant type of anxiety —psychorrhexis. Patients suffering from this type

show anguish and perplexity early in their reaction. Such cases tended to lose ground rapidly both physically and mentally and death was not infrequent. It may be that starvation and vitamin deficiency contributed to this picture. This type of reaction has not been widely reported from other sources.

Hysteria. This type of reaction has also shown increase of incidence under the stress of war time. The more frequently appearing forms are those in which the prominent symptoms are paralyses, amnesias, and anesthesias. Other well known forms, such as the aphasiac, have been reported. The symptoms shown by the individual assume varying forms, depending upon the situations involved. Hysterical convulsions are quite frequently reported as well as tics and tremors. It is also worthy of note that a great number of transition forms between the typical anxiety reactions and the clear cut hysterical responses have been reported as occurring during war time.

The obsessional neuroses have not been clearly increased in incidence during war time stress. A number of observers have pointed out that a careful anamnesis will often demonstrate the fact that in the case of obsessional neuroses as well as hysterical reactions it is possible to trace the illness back to a period prior to the onset of war.

Community Disorders have not been adequately described from the psychiatric viewpoint. Since, however, they are of the greatest importance and very seriously affect the welfare of the national group during times of stress, those facts which are available will be noted briefly. Several types of reactions have been described. The principal ones are states of insecurity, of apathy and of conflict. States of insecurity have been very prominent in the present period of warfare. The reason for this must be due at least in part to the type of war which is being waged and to the use which is being made of psychological weapons. Where there is marked insecurity, considerable falling off in production results and the national group is often forced into attitudes of defense. These attitudes, in turn, lead to a loss of initiative, to a search for a means of protection and escape, a secret fear and over-estimation of the enemy, and to defeatism rather than to a confident determination to achieve victory. Where states of insecurity become particularly marked actual panic reactions may set in. Whether or not these occurred in the general population of France during the last few days before capitulation is not known. But some observers have asserted that this was the case.

Apathy as a community response may be produced by long and repeated series of crises which first bouy the community up to take steps in its defense, but later gradually exhaust and wear out its resilience, thus leading to indifference and to inaction when real danger finally materializes. Apathy may also appear during the later stages of a prolonged war—a form of war weariness brought about by repeated traumata suffered from losses of loved members of the group, financial instability, fatigue and inadequate diet.

By conflict as a community response is meant the loss of unity due to friction between competing groups. This results in considerable loss in defensive and productive capacity.

The treatment of war psychoses embraces the same methods as those carried out in the peace time psychoses. Naturally, there may well arise limitations of facilities and personnel which will require some adaptation of the usual procedures.

When we consider the psychoneuroses we learn that experiences of the first World War have demonstrated that certain prophylatic steps are of value. The first consists in the detection of the potentially unstable individual and his removal from positions of particular stress. This procedure has been worked out to a reasonable degree of efficiency in respect to the Armed Forces, but no organization has as yet been devised to permit of ready assessment of potential psychiatric casualties in the civilian population of any of the belligerent countries.

This procedure of detection and evacuation has in the case of the Armed Forces been of value not only in protecting the susceptible individual from final breakdown, but also in maintaining the morale of the remaining individuals, since the behavioral breakdown of one member of a group tends to affect the rest of the group adversely. Further prophylactic measures which should be applicable to the civilian population as well as to the troops are periodic relief from strain (especially applicable to workers in industrial concerns), adequate recreation, and simple instruction in the nature and symptoms of war time neuroses.

The treatment for the war neuroses, especially those of relatively acute onset, is very simple—re-

moval from immediate danger, reassurance and sedation. Most cases have responded well to these simple measures. The use of other psychotherapeutic procedures, such as analysis, persuasion and re-education have also been recommended.

The most important aspect of treatment of acute war neuroses is that it should be instituted literally at once. A treatment that can be started in a few hours or at least a day or two after the traumatic experience is infinitely of more value than that instituted in a few weeks or a month after the event. With regard to the final prognosis little can be said as yet. Individuals who are rapidly and effectively treated appear in the large majority of instances to make a good adjustment, at least in the ordinary events of life. Whether or not they will break down readily on exposure once more to strain cannot yet be stated.

Since our knowledge concerning community disorders is still in its earlier stages, means of controlling them are still rather inadequately worked out. The few publications upon this matter are in agreement upon the value of close integration of the group as a means of protection against the disorders of the community which have been enumerated. Of great value is the assignment of each civilian within the community to the carrying out of a definite task. In Britain it has been discovered that a greater sense of security is achieved by the community when definite orders are given by some recognized and respected authority or leader, rather than by suggesting that certain tasks be undertaken.

We should consider the great importance of strengthening all those organizations and services in the community which are concerned with the welfare of the individual. These include not only the social agencies which are concerned with limiting individual and family insecurity, but also the remedial organizations such as special classes, nursery schools and child guidance clinics.

We are living in a period of stress and strain and emotional tension, in which we perceive mental hygiene to be more important and vital than ever. The conditions facing us are challenging ones, but I feel confident that the Mental Hygiene Groups throughout the country will make every effort to meet the requirements of a changing economic and social order adequately. Indeed, the groundwork which has been laid within the past decade or so accounts in no small measure, I believe, for the fact that, despite the stress of war, there has not been any appreciable increase in mental illness.

THE DEVELOPMENT OF PSYCHIATRY AND NEUROLOGY IN VIRGINIA*

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HISTORY. In Greek mythology the term psyche may be taken to mean the personification of the human soul. Out of this personification grew the story of Eros, or Cupid, with his darts of love, and of Psyche, a beautiful and tender maiden with butterfly wings. Psyche was prohibited curiosity by the jealous Venus and was given difficult tasks to perform, so that eventually she weakened and opened the box of ointment of beauty (what woman would not?) and was rendered unconscious. But in the end she was restored to consciousness and blissful love by an arrow from the bow of Eros (Cupid).

In a way we might carry this allegory down the pathway of the ages and feel that the word psyche not only denotes the soul, or in modern usage, the mind, but the essence and the sum of the personality. The chief characteristics of the psyche are the interactions of curiosity and of love, and the field of action of the psyche is in the realm of both the conscious and the unconscious, including the *id*.

Along this pathway through the ages investigators have had to avoid many bypaths and pitfalls and have had to endeavor to clear away over-growths which have been either obstructive or poisonous. Fortunately, this route seems of late to be more clear and, although still difficult, more easy to travel. However, bypaths of superstition, pitfalls of ignorance and clairvoyance, spiritualistic branches, misconceptions of some non-medical psychologists, and the false directions of enthusiasts harry the earnest pilgrim.

In 1607, when John Smith and his followers

*Re-edited and published with the permission of the editor of *Annals of Medical History*, Vol. 10, No. 1, January, 1938, in which journal it appeared.

landed at Jamestown to establish in Virginia the first permanent English settlement in America, oddly enough, probably the greatest psychiatrist of that age was not a physician but William Shakespeare, the Bard of Avon. Having lived in London, near Bedlam, that dread asylum for the insane whose very name now connotes confusion worse confounded, Shakespeare knew mania and melancholia, schizophrenia, senility, phantasy, feeble-mindedness and inebriety as few know them today, and what psychiatrist can equal in range or in depth his knowledge of human emotions? The marriage of his daughter to Dr. Hall, a wise physician, further added to Shakespeare's knowledge of psychiatry.

Insanity as a disease was undoubtedly known to the ancient Egyptians, Babylonians, Greeks, and Hebrews. Imhotep, an Egyptian physician (4,000 B. C.) practiced the art of mental healing, and the Egyptians used music and even occupational therapy for the treatment of the mentally afflicted. The Jews attempted interpretation of dreams and allowed sleeping in the synagogues for peace of mind. Games and baths as therapeutic measures were used in Greece. But later these things were forgotten and the insane frequently wandered about or were carted to some shrine or to some fakir. Many of them were incarcerated in dungeons and chained to posts; some were worshipped as gods or as saints; others were jeered at or ducked or drowned as witches; the majority of them were thought to be possessed of the devil. At the time of the settlement of Virginia there were but few asylums in the world; monasteries in Europe had taken care of some of the insane. In England, in France, and in Spain there were one or two asylums, but they were crude and cruel institutions.

No real advance over confinement and physical restraint was made in psychiatry in this country until 1894 when Dr. Weir Mitchell, of Philadelphia, was asked to address in Chicago a meeting of the Asylum Superintendents of America, which has now evolved into the American Psychiatric Association. These pyhsicians, few of whom could truly be called psychiatrists, looked forward to an entertaining and laudatory address from this distinguished doctor. But instead, Dr. Mitchell informed them that they were taking no adequate histories of their patients, that they were attempting no mental examinations or diagnoses, that they were neglecting laboratory and autopsy work, and that they were not administering proper treatment of their cases. The members of the association were infuriated, but they went back to their institutions and endeavored to mend their ways. This address of Dr. Mitchell marks the beginning of psychiatric advance in America. A little later, about the first of the present century, Kraepelin's epoch making book on psychiatry was translated from the German into English by Dieffendoffer, and American physicians interested in psychiatry began to classify their mental cases.

Psychiatry in Virginia. Insanity or not insanity—the first occurrence in Virginia which smacked of it was during the starving time at Jamestown when one of the famished settlers was convicted and hung for killing and eating his wife. Later witches were ducked in Virginia and some of the inhabitants were called fools, but I can find no evidence that there was much, if any, definite insanity in the colony during its first century. But evidently mental illness was creeping in, for in 1769 the situation had developed to the extent that the first insane asylum in this country was established at Williamsburg. It is interesting to note that the first two patients admitted were women—one white and one colored. In Williamsburg through Revolution and Civil War, through prosperity and through reconstruction, the old institution, now the Eastern State Hospital of Virginia, under the superintendency of Dr. G. W. Brown, has carried on and advanced.

Williamsburg is an old town and was made the capital of Virginia in 1698 when the seat of government was removed from Jamestown. In 1779 the capital was again moved, this time to Richmond. The town of Williamsburg in recent years has been made a historical shrine by Mr. Rockefeller, who has restored the old public and private buildings which were in existence and has built replicas of other buildings. The rebuilt old "hospital for the insane" building, which marks the inauguration of institutional care of the mentally ill in this country (the original building was largely burned in 1885), has been removed to a nearby site.

In 1870, the first institution for colored insane in the world was established in Virginia near Richmond. But the colored insane had been taken care of at the Williamsburg institution since 1769. In 1885 the colored insane were removed to Petersburg to form the Central State Hospital. This institution, formerly under the superintendency of Dr.

William F. Drewry, then under Dr. H. C. Henry, and now under Dr. Meade S. Brent, has been notable for its efficient care of the insane since its foundation.

In 1825 a second hospital for the insane, now the Western State Hospital, under the superintendency of Dr. J. S. DeJarnette, was established at Staunton in the beautiful valley of Virginia.

In 1887 another state mental hospital, the Southwestern State Hospital, of which Dr. Joseph R. Blalock is now superintendent, was established at Marion. In 1913 a department for the criminal insane was established there.

Last year (1940) there were about 10,000 mentally ill patients treated in the state hospitals in Virginia.

In 1911 the State Colony for Feebleminded and Epileptic was opened at Madison Heights near Lynchburg, Virginia. Dr. G. B. Arnold* is the present superintendent.

The state hospitals are under a board with Dr. Hugh C. Henry as director.

In Roanoke the government hospital for psychiatric war veterans was established in 1935. This hospital is under the management of Dr. C. T. Wilfong.

There are two psychiatric private hospitals in Virginia — Westbrook Sanatorium, established in 1911 by Drs. J. K. Hall and Paul V. Anderson, and St. Albans Sanatorium in Radford, Virginia, established in 1916 by Dr. John C. King. The Tucker Hospital in Richmond was established in 1912 for neuropsychiatric cases and there are neuropsychiatric departments at the Medical College of Virginia in Richmond and the University of Virginia at Charlottesville.

NEUROLOGY. The study of neurology began to advance somewhat earlier than that of psychiatry. In Europe the early anatomists and physiologists had described much of the form and function of the nervous system and by the time this country emerged from the Civil War, Duchenne, Dejerine, Carswell, Cruveilhier, and a few others had described a good many nervous diseases, such as disseminated sclerosis, amyotrophic lateral sclerosis, and locomotor ataxia. Just before that war Dr. John S. Wellford, who had been studying in France and who was afterwards professor of diseases of women at the Medical College of Virginia, made the diagnosis of locomotor ataxia on a case in Richmond, which was probably the first diagnosis of this disease made in the south. During the Civil War, Dr. Weir Mitchell, of Philadelphia, made many important neurological studies on wounded soldiers, and after the war Dr. Beard, of New York, described neurasthenia, which has been called the "American disease." For these cases Dr. Mitchell instituted his famous "rest treatment".

It is worthy of note that the great French physiologist, Brown-Sequard, was professor of institutes of medicine, now the chair of physiology, at the Medical College of Virginia in Richmond for the year 1854-1855. Here in the basement of the old Egyptian Building he conducted many experiments on fowl and animals, leading to his discovery of the functions of the suprarenal glands, which he published in 1856. He later also described a form of injury of the spinal cord, known as "Brown-Sequard paralysis," in which there is sensory paralysis of one side below the level of the lesion and motor paralysis of the other side. Later he traced the origin of the sympathetic nervous fibers to the spinal cord, and published many other notable papers.

At the University College of Medicine in Richmond from 1896 to 1910, Dr. J. Allison Hodges was professor of nervous diseases, and from 1910 to its amalgamation with the Medical College of Virginia, professor of nervous and mental diseases. A lecture course on nervous diseases under the chair of medicine was taught by Dr. H. H. Levy during this time at the Medical College of Virginia until 1912. The first neurological out-patient clinic in Richmond was started in 1907 at the Medical College of Virginia by Dr. Beverley R. Tucker. In 1912 Dr. Tucker was made professor of nervous and mental diseases at the Medical College of Virginia, and he continued in this position until two years ago when he resigned and was made emeritus professor and was followed in the chair by Dr. R. Finley Gayle. This chair is now known as the department of psychiatry and neurology.

At the University of Virginia, Charlottesville, about 1906, neurology was taught in separate lectures by Dr. John Staige Davis, and about that time he took the senior class over to Staunton to observe the forms of insanity. After this Dr. James C. Flippen and Dr. Paul V. Anderson gave lectures in nervous and mental diseases until September,

*Dr. Arnold recently entered the Army and has been succeeded by Dr. D. L. Harrell.

1929, when Dr. David C. Wilson was made professor of neurology and psychiatry at the University.

MENTAL HYGIENE. Mental hygiene is, of course, not a new idea. In Virginia as early as 1646 an act was passed[1] by the colonial legislature to erect a workhouse at Jamestown, the then capital, to provide for *the care and vocational education of poor children.* A *governmental system of child welfare,* under the supervision of the vestries of the established church in Virginia, was set up in 1661. Thus the early settlers certainly had mental hygiene in mind.

In 1727 the Virginia legislature passed another law which seems to come directly under the head of mental hygiene. It read as follows:

"That if it should happen that the parent or parents of any child or children, upon due proof before the court of the country wherein such parent or parents inhabit, shall be adjudged incapable of supporting or bringing up such child or children, by reason of his, her, or their idle, dissolute, and disorderly course of life, or that they neglect to take due care of the education and instruction of such child or children, in Christian principles, that then it shall and may be lawful upon certificate from said court, to and for the churchwardens of the said parish, where such child or children shall inhabit to bind out, or put to service or apprentice such children for such time or term, and under such covenants, as hath been usual and customary, or the law directs in the case of orphan children."

Another law to set up work-houses to give trade education to little children was passed in 1755.

The term mental hygiene was used in 1843 by William Sweetster, author of *Mental Hygiene or an Examination of the Intellect,* and in 1863 by Dr. Isaac Ray who published a book entitled *Mental Hygiene.* But it was not until a little over a quarter of a century ago that mental hygiene as a new conception was born in the mind of Clifford Beers who had been mentally ill. Beers was not a physician, but his ideas had so much back of them in contemplation and in patient observation that great doctors like Pierce Bailey, Salmons, and Frankwood Williams practically gave their lives to developing these ideas, and thus the National Committee for Mental Hygiene was formed.

Recently under the Department of Public Welfare various institutions have been founded in Virginia. There are juvenile and domestic relations courts in a good many of the cities of Virginia; several homes for girls with conduct disturbance, chief of which is the Virginia Industrial Home for Girls at Bon Air in Chesterfield County, some industrial schools for boys, especially the Blue Ridge Industrial School in Greene County; the Children's Home Society of Virginia in Richmond and another at Charlottesville; various probation agencies; child guidance clinics, especially the Children's Memorial Clinic in Richmond, and another under the neuropsychiatric department of the University of Virginia; social service bureaus; a school of social work and public health under the College of William and Mary, Richmond Division, Dr. H. H. Hibbs, director; welfare societies; industrial homes for colored boys and girls; out-patient and bedside clinics at the University of Virginia in Charlottesville and the Medical College of Virginia in Richmond; travelers aid societies; and various other agencies with church or other affiliations. One of the active agencies of the State is the Mental Hygiene Bureau in Richmond, Dr. J. N. Williams, director. It was established by Dr. William F. Drewry who had resigned the superintendency of the Central State Hospital at Petersburg. This bureau has taken a useful place in the mental hygiene movement of the Commonwealth. The Mental Hygiene Society of Virginia was established in Richmond on February 18, 1937, and the writer was elected its first president. This society is under medical direction with lay members.

The Children's Memorial Clinic of Richmond was started in Richmond in August, 1924. It is a child guidance clinic, and with the help of the Commonwealth fund and the friends and patients of Dr. McGuire Newton, a beloved and famed pediatrician, it was founded. This clinic, under Dr. Harvie DeJ. Coghill, with Dr. Howard R. Masters president of its board, has reached a high standard. It examines cases for the Department of Public Welfare of the State and the Juvenile Court of Richmond.

In 1920 there was established by Governor Westmoreland Davis the Governor's Advisory Board on Mental Hygiene for the State Penitentiary. This board was organized by the writer as chairman and is still in active existence. The reports and papers of Dr. James Asa Shield, its present secretary, have received wide and complimentary attention.

1. Public Welfare Function of Government in Virginia, by Arthur W. James, Commissioner of Public Welfare, 1934.

LEGISLATIVE. The legislative bodies of Virginia have endeavored to keep pace with the advancing ideas of psychiatry and its affiliated movements of eugenics, mental hygiene, and conduct disturbance. In this endeavor they have done fairly well, but there is much to be desired. In the matter of sterilization many think the State has gone too far in the adoption of its drastic law.[2] The state, however, has so far restrained from entering the lists of the birth controlists. A law providing for pre-marital Wassermann tests has been passed. The Neuropsychiatric Society of Virginia started eight years ago and this society has aided in the passage of bills by the General Assembly which it is hoped will get the legislation on various matters pertaining to psychiatry in better shape. There was an act passed in March, 1910, which enabled the trial judge, at his discretion, to appoint a committee of three psychiatrists to examine the accused in the question of mental derangement and report to the court. There is, of course, other legislation related to criminology and psychiatry which cannot be brought into the scope of this paper.

Much basic legislation has been accomplished. To quote from Mr. Arthur James, former Director of Public Welfare: "To extend information, organization, and supervision to the one hundred counties and the numerous towns and cities of the State, the public welfare reorganization act of 1922 provided for local welfare units, where they are deemed expedient, each consisting of a juvenile and domestic relations court, a board of interested citizens, and a full time, trained social worker or superintendent of public welfare. It provided also for a children's bureau in the capital at Richmond to cooperate with the welfare units in handling all cases involving dependent, delinquent, and neglected children, as well as for a mental hygiene bureau to cooperate with all hospitals for the insane and the colonies for the epileptic and the feebleminded, and other bureaus, all under the supervision of the Commissioner of Public Welfare. This system has been retained under the present organization of the Department." At the last meeting of the American Psychiatric Association held in Richmond, May 5 to 9, 1941, Dr. James King Hall, a learned and admired psychiatrist of Richmond, was elected its president.

CONCLUSION. In this review of the development in Virginia of psychiatry and neurology, one may, justifiably, I believe, not be ashamed of the progress reported. Yet, the future is faced by those interested not so much with Utopianism as with knowledge that things are not as satisfactory as they should be, and with an earnest determination that they shall be made better.

2. A Critique of Proposed "Ideal" Sterilization Legislation. By Abraham Myerson, M.D., Boston, Mass. Archives of Neurology and Psychiatry, Vol. 33; No. 3; Page 453. March, 1935.

THE TREATMENT OF ACUTE APPENDICITIS WITH PERITONITIS*

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The management of patients with simple acute appendicitis has become fairly well standardized in recent years and the mortality and morbidity have been reduced to a minimum, but the treatment of the various conditions resulting from perforation of the appendix is still unsettled, and the results vary widely in different clinics. The treatment of appendicitis, acute, perforated, with spreading or diffuse peritonitis, has recently been radically changed in the Medical College of Virginia Hospitals. Since our results appear to be considerably improved, we feel that we are justified in reviewing our present plan of management of these patients and the results obtained.

In 1938, Dr. J. M. T. Finney, of Baltimore, presented a paper before the Richmond Academy of Medicine describing a method of treatment of diffuse peritonitis from rupture of the appendix. Dr. Finney reported about 150 such cases which he had treated without a death. Although we were impressed by the exceptional results reported, the recommended treatment seemed so radical that we did not immediately adopt it. Several months later, however, when a nine year old colored girl with diffuse peritonitis was admitted to the Saint Philip

*From the Department of Surgery, Medical College of Virginia.

Hospital, her condition appeared so desperate that it was decided to give the Finney method of treatment a trial. The patient made an unusually rapid and satisfactory recovery, with the result that subsequent cases were similarly treated.

Dr. Finney recommended a prompt laparotomy and appendectomy, a careful peritoneal toilet, and closure of the abdomen without drainage. This was followed immediately by the administration of castor oil through a nasal tube and a repetition of the dose several hours later if necessary. Supportive measures were given in the form of parenteral fluids and blood transfusions.

We have made several modifications in the plan of treatment recommended by Dr. Finney, but at present our treatment of patients with peritonitis following perforation of the appendix is fairly well standardized. We remove the appendix and in most cases invert the stump. We clean the peritoneal cavity as carefully as possible and remove all collections of contaminated fluid and pus. We then insert from seven to fourteen grams of a powdered sulfonamide preparation (in adults) and close the peritoneum tightly. If there has been unavoidable gross contamination of the wound, we introduce two or three through-and-through sutures of silkworm gut but do not tie them, then fill the wound with sulfonamide crystals, and leave it wide open, applying continuous hot wet dressings to the area. If there has been no obvious gross soiling of the wound, we close it loosely around two drains which extend down to the peritoneum, and again apply hot wet dressings. A Levine tube is inserted through the nose into the stomach before the operation or as soon afterwards as possible. Postoperatively the patient is given an initial dose of one to one and a half ounces of castor oil through this tube, and the tube is clamped off for one to two hours. The tube is then connected to a Wangensteen suction apparatus and the patient is allowed to drink all of the water he desires as long as the tube is working. The patient is given prostigmine every four hours and multiple blood transfusions, and an adequate daily fluid intake is maintained intravenously. The administration of a high concentration of oxygen is of great value. After eight hours another ounce of castor oil is given through the nasal tube, and if there has not been a bowel action in another four hours an ounce of milk of magnesia is given every hour until an action takes place. Usually this occurs after the second or third dose, but sometimes a small enema is necessary. Such treatment is continued until the abdomen is flat and the patient obviously recovering. We then remove the nasal tube and gradually restore the full food intake. If the wound has been left open, the silkworm sutures are tied on about the third or fourth day. If drains were used they are removed on about the fifth day.

RESULTS

In the ten year period ending July 1, 1941, we have done 7,436 appendectomies at the Medical College of Virginia Hospitals. In this group there were 126 deaths, a mortality rate of 1.69%. In the entire group there were 2,927 cases of acute appendicitis. Of these 2,927 cases of acute appendicitis there were 95 deaths, a mortality rate of 3.26%. Of the 2,927 cases, there were 2,028 cases of simple acute appendicitis, 428 of appendiceal abscess, and 471 of ruptured appendicitis with diffuse or spreading peritonitis. This paper deals primarily with the latter group in which there were 57 deaths, or over one-half the total number of deaths in all types of appendicitis.

TABLE I

	NUMBER OF CASES	NUMBER OF DEATHS	MORTALITY RATE
Acute appendicitis	2,028	11	0.54%
Appendiceal abscess	428	27	6.3%
Ruptured appendicitis with diffuse peritonitis	471	57	12.1%

Since 1939 we have used the Finney type of treatment almost routinely in patients with diffuse peritonitis from rupture of the appendix. Prior to this time a varied number of treatments were used, most of which hinged around draining of the peritoneal cavity and pelvis. Up until the advent of our change in treatment we had had 398 cases of ruptured appendicitis with peritonitis and 56 of these patients died, giving a mortality rate of 14%. Since we have been using the castor oil treatment we have had 73 consecutive cases with but one death. The mortality rate has thus fallen to 1.3% in this group. The one death occurred in a small girl with peritonitis of 48 hours' duration who developed a streptococcus septicemia and bacteremia and finally died with a massive pneumonia. In our last 61 cases there has not been a single

death. In the uncomplicated cases, the average length of stay in the hospital was 16 days. This is compared to the average with the old drainage treatment of 26.5 days. The shortest hospital stay with the Finney treatment was 9 days, and with drainage was 16 days. In other words, a patient not only has a greater chance for recovery but his hospital stay averages ten days less.

DISCUSSION

The most important cause of death in patients with diffuse peritonitis is a paralytic ileus causing a small bowel obstruction. Whereas the usually accepted methods of treatment certainly do not prevent and may actually promote obstruction, the Finney method of treatment has the opposite effect. That this is important is shown by the fact that recovery seems almost assured when satisfactory bowel movements occur. The castor oil has proved its value in restoring the activity of the alimentary tract to normal. We place a great deal of faith in the local use of the sulfonamide drugs, and we use from seven to fourteen grams of the crystals of sulfanilamide or a mixture of sulfanilamide and sulfathiazole locally in the peritoneal cavity and in the wound itself. This is later supplemented by 0.8% sulfanilamide in saline hypodermically and occasonally by sodium sulfathiazole intravenously. We feel that this method of administration gives an adequate local concentration as well as a satisfactory blood level.

A high concentration of oxygen is a desirable adjunct to treatment. The oxygen prevents cyanosis, reduces distention, and offers a convenient means of refrigeration for the feverish and toxic patient.

Multiple blood transfusions restore the body proteins, help to control distention, and aid the patient in overcoming the infection. The administration of 500 or more cubic centimeters of blood or plasma is desirable during the first few days.

The nasal catheter suction drainage plays an important part in overcoming the distention of the small bowel. It also allows the patient to take as much fluid by mouth as he wants, thus contributing to his comfort.

An adequate check on the blood chemistry is maintained during the convalescence and the necessary vitamins B and C are given wherever possible. Thus castor oil, oxygen, parenteral fluids, blood, the sulfonamide drugs, and vitamins, all play a part in the treatment of these cases.

Obviously castor oil should not be employed if the appendix is not removed or if the cecum is extensively involved by the infection. Peristalsis is increased to such an extent that perforation of the wall of either the appendix or the cecum might easily produce an outpouring or fecal matter into the peritoneal cavity. If the appendix is removed and if the cecum is not involved by the inflammatory process, castor oil is apparently without danger.

COMPLICATIONS

The complications encountered with the Finney treatment are about the same in severity and variety as with any other type of treatment. We have had 2 subdiaphragmatic abscesses and 12 pelvic abscesses in the 73 cases reported. A recovery was obtained in each case. Postoperative pneumonia is apparently present in this type of treatment to as great an extent as in our previous type of treatment, as is atelectasis.

SUMMARY

A relatively new treatment for peritonitis from a ruptured appendix has been presented. Seventy-three cases have been reported with but a single death.

The mortality for this type of peritonitis has been reduced from 14% with the old treatment to 1.3% with the Finney treatment.

The average length of stay in the hospital has been reduced ten days with the new treatment.

In addition to the use of castor oil, vitamins, parenteral fluids, blood, oxygen, and the sulfonamide drugs play a part in the treatment of these cases.

Our last 61 cases have been treated without a fatality.

Medical College of Virginia Hospital.

VITAMINS—RECOGNITION OF AVITAMINOSIS IN CLINICAL PRACTICE*

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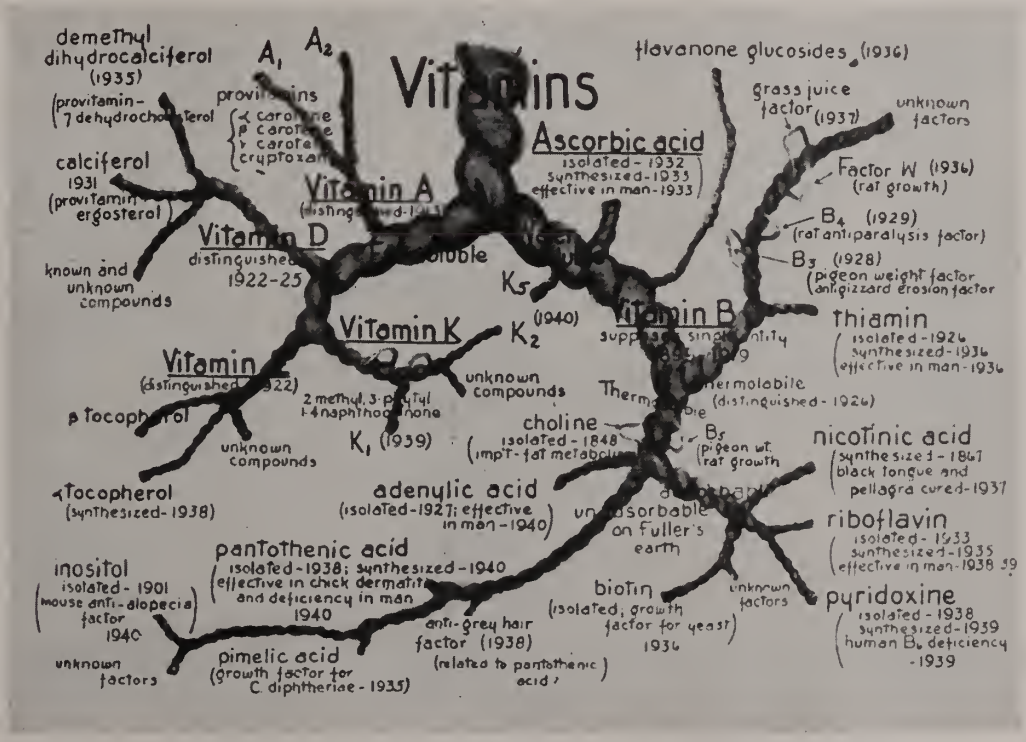
The occurrence and obscure etiology of a variety of degenerative changes of peculiar character in organs and mucous membranes have long been recognized as one of the mysteries of pathology. Perhaps one of our most significant achievements in medicine has been the advance in the young and vigorous science of nutrition. Rapid progress has greatly changed our understanding of the clinical manifestations of nutritional deficiencies, their diagnosis and treatment. The story of the vitamins is the growth of a great science.

Vitamins are organic food substances which, however small the quantities, are necessary for maintaining proper growth and continued health of the body. Funk compounded the word "vitamine" of the prefix "vita" and of the suffix "amine" because his original crystals contained basic or amine nitrogen and were essential to life. The term was modified by dropping the final "e" at the suggestion of Drummond, when it was determined that an amine group was not a characteristic of vitamins. In the past, vitamin therapy consisted in the use of food substances which were rich in the particular vitamin required. At present, crystalline preparations of highly potent concentrates are available and may be given in a pure form and in exact doses of the particular agent desired. This availability of potent vitamin preparations has greatly enhanced the clinical knowledge of vitamins. Clinical, laboratory, and dietary studies indicate that the specific deficiency syndromes occurring from inadequacy of vitamins are so interrelated as to suggest that the

*Paper delivered at the first meeting of the Medical Auxiliary at Greenville, South Carolina, February 24, 1942.

CHART I

AFTER SPIES AND BUTT



Para-aminobonzoic acid (1941) from the filtrate factor related to pantothenic acid.

CHART 2

AFTER EDDY AND DALLDORF

ALPHABETICAL DESIGNATION	CHEMICAL NAME	PHYSIOLOGICAL CHARACTERIZATION
Vitamin A_1	Activated carotene	Antixerophthalmic factor
Vitamin A_2	Activated carotene	Antixerophthalmic factor
Vitamin B_1	Thiamin or aneurin	Antineuritic or Antiberberi factor
Vitamin B_2 (G)	Riboflavin	Anticheilosis factor
Viatmin B_3	Williams-Waterman factor	Bird Weight maintenance factor
Vitamin B_4	Reader factor	Rat paralysis preventive factor
Vitamin B_5	Peters' factor	Heat stable, pigeon weight maintenance factor
Vitamin B_x	P-aminobenzoic acid $C_7 H_7 O_2 N_1$	Chromotrichial factor, rat and human
Vitamin B_6 (filtrate factor I)	Adermin or pyridoxin	Rat anti-acrodynia factor
Filtrate factor II	Pantothenic acid	Juke's anti-bird dermatitis factor
Vitamin C	Ascorbic acid	Antiscorbutic factor
Vitamin D_2	Calciferol	Antirachitic factor
Vitamin D_3	Activated 7 dehydrocholesterol	Antirachitic factor
Vitamin E	Tocopherol	Antisterility factor
Vitamin H	Biotin, coenzyme R	Anti-egg-white dermatitis factor
Vitamin J	Von Euler's factor	Antipneumonia factor
Vitamin K	2 methyl, 3 phytyl, 1,4 naphthoquinone	Blood coagulation factor
Vitamin L_1 Vitamin L_2		Japanese lactation factor
Vitamin M	Day's factor	Anti-monkey pellagra factor
Vitamin P	Citrin or eriodictyol	Anti-hemorrhagic diathesis factor
Vitamin U	Stokstad-Manning factor	Chick growth factor
Vitamin W	Elvehjem factor	Rat growth factor
Vitamin P-P	Nicotinic acid (Niacin)	Antipellagra or black tongue factor

same general biochemical systems are disturbed. Clinicians have found in their day to day practice of medicine that convalescence is greatly shortened by administering the water soluble vitamins combined and the fat soluble vitamins together, rather than by treating the patient with a single chemical substance.

In Chart I, I have shown graphically, after Spies and Butt, a schematic arrangement of all the known vitamins arising from a central trunk giving off its branches and, in turn, their branches and twigs. By far the larger group of vitamins, which are known as "the water soluble vitamins", comprise the so-called B complex. From the other main branch are the so-called "fat soluble vitamins", vitamin A, vitamin D, vitamin K, and vitamin E. In Chart II, I have tabulated all the known vitamins, their alphabetical designation, chemical name, and physiological characteristics. Chart III indicates the variability in unitage of various common vitamins. The sale of vitamins by the druggist over the counter, as compared with therapeutic amounts prescribed by a physician, has been greatly abused because of the lack of uniformity in labeling the unitage on the package. Vitamin B_1, thiamine hydrochloride, for example, has five different units, all

CHART 3

AFTER EDDY AND DALLDORF

Vitamin A
1 Int. unit=0.0006 mgm. Beta-carotene
1 Int. unit=0.7 Sherman-Munsell units
Vitamin B_1
1 Int. unit=0.003 mgm. thiamin
1 Int. unit=2 Sherman-Chase units
1 Int. unit=0.5 Smith curative units
1 Int. unit=1.0 Chick-Roscoe units
1 Int. unit=20.0 Cowgill mgm.—equivalents
Vitamin C
1 Int. unit=0.05 mgm. ascorbic acid
1 Int. unit=0.1 Sherman-LaMer unit
Vitamin D
1 Int. unit=0.000025 mgm. calciferol
1 Int. unit=1 U.S.P. unit
1 Int. unit=0.37 Steenbock units
1 Int. unit=1 A.D.N.A. unit
1 Int. unit=1 Oslo or Poulsson unit

equivalent to one international unit. Our problem today is to have all vitamins labeled under one standard in milligrams.

VITAMIN A

A clue to the nature of this vitamin came with the demonstration that it occurs in plant sources as a yellow pigment; first identified by Wackenroder in 1826, and called by him carotene because he obtained the pigment from carrots. Alpha carotene and gamma carotene, although having the same molecular weight as beta carotene, are asymmetrical in structure and each gives rise to only one molecule of Vitamin A. Beta carotene predominates in nature. Little can be done chemically to vitamin A before it loses its activity. It is evident that polymorphia forms of vitamin A may exist. These have been designated as vitamin A_1 and vitamin A_2. The former predominates in the tissue of salt water fishes, the latter in fresh water fishes. Vitamin A has at least two important functions in the body, an important role in vision in the retinal cycle and a seemingly essential role in the integrity of epithelial cells. Vitamin A is absorbed from the intestines and transported in blood and lymph to the liver where the greater part of it is stored. Under normal conditions the absorption of vitamin A is nearly complete for amounts near the minimum requirement, although always there is some lost in the stool. When larger amounts are ingested, absorption is less efficient and when excessive amounts are given, the greater part of it may be lost in the stool. In states of depletion, however, the absorption of large amounts may be more complete. Bile is helpful in the absorption of vitamin A, but is not necessary as in the case of carotene.

Deficiencies of vitamin A are the cause of one form of night blindness or hemeralopia and of those diseases of the eyes long known as xerosis, xerophthalmia and keratomalacia. In addition, a specific dermatosis and changes in the epithelium of certain internal organs have been described recently. A mild, latent, or sub-clinical deficiency may exist, presenting no clearly recognizable clinical signs or symptoms, but detectable by instrumental means or by histological examination postmortem. Night blindness, a diminished visual acuity in dim light, has been known for centuries. Xerosis, xerophthalmia and keratomalacia may generally be considered progressive, severe stages of the same disease of the eye, the last named complicated by secondary infection and destructive changes. The skin dermatosis of vitamin A deficiencies consists of a papular eruption, usually occurring first on the antero-lateral surface of the arms and thighs, spreading to involve the legs, abdomen, buttocks, back and neck. The papules are conical or hemispherical and contain a central intrafollicular plug which projects from the surface or is covered with a loosely adherent scale. Similar changes may occur in the vagina, the mucosa of the upper respiratory tract and the mucosa of the upper gastro-intestinal tract. The diagnosis of vitamin A deficiencies is made from a knowledge of a probably deficient intake or absorption, and recognition of the changes produced in various structures and function affected. Inquiry should be made about the early symptoms of night blindness, dryness of the eyes, burning, redness, conjunctivitis, photophobia, and asthenopia.

Pure vitamin A has been prepared from natural sources and also synthesized, but it is not yet available for general use. In practice, the preparations used are cod or other fish liver oils, either in the concentrated form containing 2,000 units per gram (about 8,000 per teaspoon) or the dilute containing 600 international units per gram. Carotene, or provitamin A, possesses certain advantages as it can be given parenterally in those rare cases in which the oral administration is impossible. Approximately double the dose in units should be given

when carotene is used and it should be remembered that factors that interfere with absorption affect carotene itself in a greater degree than does vitamin A. Whenever possible, the administration of vitamin A should be accompanied by a diet rich in this vitamin. The normal diet should contain the normal daily minimum requirement.

VITAMIN D

Before the discovery of vitamin D, approximately 80 per cent of urban children suffered from rickets. The classic studies of Mellanby in 1919 showed that experimental rickets could be prevented by cod liver oil. Huldschinsky[1] in 1920 demonstrated the efficacy of sunlight and ultra violet light in the prevention of rickets. In 1924 Hess and Weinstock,[2] and, independently, Steenbock and Black,[3] showed that ultra violet irradiation could impart anti-rachitic activity to foods. It was first believed that cholesterol was the substance in food which became anti-rachitic after ultra violet irradiation. Further studies showed the vitamin precursor to be ergosterol. There are at least ten different substances that possess vitamin D activity.[4] All have the same chemical structure, being derivatives of cyclopentenophenanthrene. It is of interest to recall that the sex hormones, the adrenal cortical hormones, and the cardiac aglycones have the same basic structure. Of the many substances having vitamin D activity, two are of outstanding importance. They are the products of irradiation of ergosterol and 7-dehydro-cholesterol (D_3). When ergosterol is exposed to ultra violet irradiation, one of the several successive products formed is known as calciferol or vitamin D_2.[5]

The most characteristic and best known result of vitamin D deficiency is rickets. A deficiency of vitamin D causes a disturbance in the metabolism of calcium and phosphorus. In adults the bones cease to grow, and there results a disease known as osteomalacia. Vitamin D is also related to the action of the parathyroid. When the parathyroids are removed, vitamin D is less effective although not all of its action is lost. In hyper-parathyroidism, or when parathormone is administered, more vitamin D is required. Relatively small amounts of vitamin D are taken in with the food under ordinary conditions. It occurs in significant amounts in only a few foods, as milk, eggs, and certain fishes. Vitamin D is toxic in large doses, but the amounts of excess are much greater than those ordinarily employed in the prevention and treatment of rickets. It must be remembered that other pathological conditions, particularly gastro-intestinal diseases, may lead to a deficient absorption of calcium and phosphorus. The diagnosis of rickets is based on the symptoms and physiological signs of the disease, the evidence on x-ray examination, the determination of phosphate and phosphatase concentration in the blood, and a therapeutic trial. In hypervitaminosis D the concentration of both phosphorus and calcium in the serum are increased if the excess is great enough and such an increase may be a forerunner and warning of toxic effect. The treatment of vitamin D deficiencies consists of replacement of the deficiency with the administration of cod liver oil, viosterol in oil, concentrated fish liver oils, fortified fish oils, and high vitamin D food intake.

VITAMIN C

Vitamin C is ascorbic (cevitamic) acid, a six carbon chain related to the hexuronic acids which in turn are derivatives of the simple sugars. It is a powerful oxidation reduction agent, that is to say, a substance capable of reducing many organic compounds during which process it is reversibly oxidized to dehydroascorbic acid. Dehydroascorbic acid in turn is readily reduced back to ascorbic acid or vitamin C by oxidation process in the body. Vitamin C cannot be synthesized by the human body and it is entirely supplied and normally obtained from food. This vitamin is rapidly and completely absorbed in the intestine and distributed throughout the body by food and is in higher concentrations in certain organs and tissues. Structures rich in vitamin C are the adrenal glands, pituitary gland and intestinal wall. Vitamin C is a water soluble vitamin which has been isolated and synthesized[6] in pure crystalline form. It is necessary for the maintenance of the normal structure and proper formation of the intracellular ground substances of mesothelial tissue and structures derived from this tissue, such as connective tissue, bone, teeth, capillaries, etc.

A deficiency in the intake of vitamin C leads to scurvy and the first symptoms arise from pathological lesions in the bones and blood vessels. There may be periosteal hemorrhages. The dentine of the teeth is reabsorbed, atrophied and degenerated, with rarefaction of the alveolar bone resulting in loosening of the teeth. Changes in the cells of the capillaries increase their fragility, leading to hemor-

rhage in the skin, muscles, bones, and gums. It has been contended that vitamin C affects other blood conditions than hemorrhage, namely, certain forms of anemia. King,[7] in 1939, accumulated observations showing the value of increased vitamin C intake in hemolytic streptococcic infections, tuberculosis, rheumatic fever, peptic ulcer and artificial fever. In 1935, Sulzberger and Oser[8] noted a change in immunologic responses of the skin toward neoarsphenamine when ascorbic acid was administered in large doses. In 1936, King[9] cited various responses supporting the view that vitamin C may influence the action of certain enzymes. A relation between vitamin C supply and certain hormones is suggested by a number of observers. Mild, atypical cases of scurvy are much more frequently seen than the clinically definite case. This so-called sub-clinical scurvy masquerades as rheumatism, gingivitis, purpura, hemophilia, and osteomyelitis. The treatment of scurvy requires only the administration of ascorbic acid. Fortunately, vitamin C is a vitamin which can be adequately supplied from natural foods. Several grams are required to saturate the severely ascorbutic individual, whereas an adequate dose for mild cases is about 100 milligrams daily.

VITAMIN B

The entire group of the B complex are "water soluble vitamins". Much could be written on their actions, interactions, nutritional deficiencies and their treatment but space permits only a brief review of the various factors of the B complex.

VITAMIN B_1

Thiamine chloride was first synthesized by Jansen and Donath[10] in 1926. Windaus established the correct empirical formula in 1936. Williams and Ruehle[11] in the same year announced its structure and verified it by synthesis. Thiamine has no pharmacological action; i.e., it is without effect except in deficient subjects. No true toxic action has been demonstrated.

Symptoms of Deficiency. Severe thiamine deficiencies lead to the condition known as beriberi. The first symptoms of thiamine deficiency are related to the nervous and cardio-vascular systems. They begin with a sense of heaviness and weakness in the limbs, followed by marked sensory disappearance in the extremities, such as localized areas of anesthesia, and hyperesthesia, aching and burning. The nerve trunks are tender to pressure. There is a gradual loss of muscle strength and in the extreme cases this may manifest itself in the form of foot or wrist drop, with possible complete paralysis of a limb. The legs are usually affected to a greater extent than the arms. There may be symptoms referable to the gastro-intestinal tract such as loss of appetite, constipation, and later epigastric distress and tenderness. Again, the sub-clinical form with mild symptoms may be entirely missed. The human requirements of thiamine are approximately, for an adult, 280 units a day, i.e., a little less than 1 mg. This minimum requirement should be raised, if for any reason absorption is faulty, or utilization is increased as a result of an elevated metabolic rate. Thiamine hydrochloride is marketed in oral tablets containing 1-10 mgs. each, elixirs, and in sterile solution for parenteral treatment.

RIBOFLAVIN (B_2)

B_2, riboflavin (or G), was first identified in milk by Blyth in 1879. At that time the substance was called lactochrome and its physiological significance was not appreciated. Later the compound was obtained from other sources and was designated as lactoflavin because it had an intense yellow color. That lactoflavin was a component of the B complex was not appreciated until it was observed that concentrates of the so-called vitamin B_2 (G) had an intense yellow color, the intensity of which was related to the vitamin potency. Riboflavin is water soluble, relatively stable to mineral acids and oxidizing agents but sensitive to alcohol and easily decomposed by light. This fact should not be forgotten in clinical practice as parenteral material containing riboflavin has been distributed in white bottles instead of dark bottles, thus rendering the material inert in even a few hours. Riboflavin is apparently an essential constituent of the yellow oxidation enzyme. Although the chemistry of riboflavin and its function in oxidizing systems is known, little or nothing is understood of the manner in which this deficiency produces the pathological changes clinically observed.

Deficiency Symptoms. Riboflavin deficiency in human beings was first reported by Sebrell and Butler[12] in 1938. The symptoms are associated with the characteristic lesions, inflammation of the lips, fissures in the corners of the mouth, glossitis, dermatitis, and a vascularizing keratitis. The ocular symptoms are the most consistent and may appear

before other symptoms of the deficiency. The diagnosis of riboflavin deficiency is made by a study of the diet, the presence of gross clinical lesions, detection of the microscopic changes in the cornea with the slit lamp, and a therapeutic trial. The requirement of riboflavin for both children and adults approximates 100 mgs. (0.1 gm. per 100 calories of food). Riboflavin is rather widely distributed in foods. Those especially rich in it are milk, liver, eggs, green vegetables, and fruits. The normal daily diet should supply riboflavin in amounts greater than the minimum daily requirement.

NIACIN

Nicotinic Acid (Niacin) (Vitamin P-P) (Anti-Black Tongue or Anti-Pellagra Factor). The classical work of Goldberger and his co-workers of the United States Public Health Service did much to establish pellagra as a deficiency disease resulting from an inadequate intake of what was then known as vitamin B_2 (G). Long before Goldberger's work Funk, in 1913, isolated from rice polishings a compound which he identified as nicotinic acid. Nicotinic acid, its amide and its sodium salt are equally effective in the treatment of pellagra. Nicotinic acid in the form of the amide is combined by the body with phosphoric acid, and amino-acid adenine, and a sugar, ribose, to form a co-enzyme. Thus it is a part of one of the essential enzyme systems, being used for the transfer of oxygen in an oxidation process concerned with the fundamental life of the cells. Lack of nicotinic acid prevents the formation of cozymase because the body cannot synthesize nicotinic acid. However, despite the fact that much is known of the manner in which this co-enzyme acts in the biologic processes in cell metabolism and isolated tissues, almost nothing is known of the relation of this action, or disturbances in this action, to the physiological, pathological, and structural changes which characterize the disease, pellagra.

Pharmacological Action. Niacin is several hundred times less toxic than nicotine and does not possess the latter's action on the autonomic nervous system. It is also less toxic than nicotinamide. In human beings, nicotinic acid in therapeutic doses causes a transient vaso-dilatation which disappears within two hours and is especially noticeable over the blush areas. The flushing may be accompanied by itching and burning. According to Bean and Spies,[13] there is a cutaneous temperature rise. The peripheral blood flow is increased. This action is not shared by nicotinic acid amide. Tolerance varies, but for most persons it is in the neighborhood of 50 mgs. in a single oral dose, and 10 mgs. intravenously. No other serious toxicity has been observed and it is unlikely that any will occur except when relatively enormous doses are given. Occasionally patients will be seen who have concentrated vaso-dilatation of the gastric vessels. Symptomatically they complain of severe, colicky epigastric pain; in a rare case the pain is so severe that syncope may be produced, the reaction lasting but a few minutes. In practice if one is to give parenteral nicotinic acid or a vitamin B complex containing nicotinic acid, therapeutic trial with small doses should first be used to ascertain the patient's tolerance.

Pellagra may be characterized clinically by dermatitis, stomatitis, gastro-intestinal and nervous symptoms; anatomically by degenerative lesions in these structures; etiologically by a deficiency of a specific dietary substance, the P-P factor of Goldberger or nicotinic acid, nicotinamide, or carboxy-pyridine derivatives able to replace niacin in the diet. The diagnosis of pellagra rests, as it does in other deficiency diseases, on a knowledge of the diet, detection of signs and symtpoms of the disease, whether they be slight or noticeable, the results of laboratory tests, and the response to a therapeutic test. The treatment consists of replacement therapy with nicotinic acid or nicotinic acid amide. Fortunately, most of the commercial preparations are standardized in milligrams or micrograms. The response to treatment may be dramatic, as exemplified by the complete healing of a severe glossitis after one or two intravenous injections of 100 mgs. of nicotinic acid amide in a twenty-four-hour period.

PANTOTHENIC ACID

Pantothenic acid (Filtrate Factor II) D-pantothenic acid is a pale yellow viscous oil that is difficult to purify. The active material is prepared for commercial use in the form of the water soluble calcium salt. Pantothenic acid is present in all plant and animal tissue, and received its name because of its universal occurrence. Although pantothenic acid has proved essential for the normal development of the rat and chick, little is known of its physiology or function in human beings. The

lesions in rats consist of sores about the mouth and a scaly dermatitis first seen in the axilla, groin, and over the back between the scapulae. A frequent finding in the experiments of György *et al*[14] was congestion with patchy hemorrhages of the adrenal glands. More recently Daft, Sebrell, Babcock, and Jukes[15] report that supplementing a B-complex deficient diet with pyridoxine hydrochloride increases the frequency of adrenal hemorrhage and that synthetic pantothenic acid arrests and causes the lesions to heal. The external signs of disease are nosebleeds, ocular exudate, spectacled eyes and depilation about the mouth and nose. The anti-graying factor was demonstrated in rats by Morgan *et al*.[16] Pantothenic acid is a normal constituent of the blood and urine. The excretion of pantothenic acid is increased tremendously after parenteral oil administration of the vitamin. As far as is known at the present time the maintenance requirement of pantothenic acid is between 50 and 100 mgs. per day.

PYRIDOXIN (B_6)

(Filtrate Factor I) Pyridoxin or adermine is also known as the rat anti-acrodynia factor. Pyridoxin is crystallized usually as the hydrochloride and is extremely water soluble. Little work has been done on the site of absorption of pyridoxin. The vitamin was synthesized by Harris and Folkers[17] in 1939. It is evident that the physiological function of vitaman B_6 is linked with the utilization of unsaturated fatty acids. From a pharmacological point of view pyridoxin is rather inert. The toxicity of the substance for human beings is very low; 50 to 100 mgs. are commonly given without untoward effect. There may be some pain at the site of injection. In some cases sleepiness and actual sleep follow such an injection. Spies, Bean, and Ashe[18] have shown that a deficiency syndrome characterized by nervousness, insomnia, irritability, abdominal pain, weakness, difficulty in walking, has disappeared dramatically following the intravenous administration of pyridoxin. These symptoms were not relieved by therapy with nicotinic acid, thiamine, or riboflavin. Dosage, so far, has been on an empirical basis, and the large amounts given are probably more than is necessary in this type of deficiency. In people with missed deficiencies who have been treated with other B-complex vitamins it is important to remember that when weakness, lethargy, abdominal pain, and ataxia occur, pyridoxin deficiency must be suspected and a therapeutic trial is indicated. It has been used clinically in Parkinsonian syndrome, in muscular atrophies and amyotrophic lateral sclerosis, but the results are as yet not entirely confirmed.

INOSITOL

Inositol is a colorless water soluble crystalline solid. It is a saturated cyclic compound with some carbohydrate properties, but without the reducing power of a sugar. The definite tests for inositol have not had wide application and therefore very little is known of its occurrence in plants and animal physiology. The vitamin is present in all the tissues of the body. Its toxicity apparently is very low, since it has been reported that no harmful effects have followed the ingestion of a dose as large as 50 mgs. Wooley[19] has recently found this substance curative in mouse alopecia. Little is yet known of its clinical value. I have used this vitamin in a small number of cases in combination with para-aminobenzoic acid but as yet I cannot draw definite conclusions.

BIOTIN

Biotin (vitamin H) (co-enzyme R), a growth-stimulating substance, has been separated from the bios complex of vitamin-like growth factors. Its physiological activity has been investigated in lower forms of plant and animal life and its occurrence in mammalian tissue forecasts wide importance. Recently biotin in the experimental work of Birch and György[20] was shown to possess the biological activity previously ascribed to vitamin H (the egg white injury factor) and co-enzyme R. The chemical properties of biotin were isolated by Kögl and Tonnis[21] who crystallized small quantities of it from egg yolk. When rats were kept on diets containing uncooked egg white, they developed a characteristic syndrome known as "egg white injury". Continued feeding of this diet ultimately results in the death of the animal. György's experiment showed that this injury was the result of an interaction of a specific protein, avidin, present in the egg white, with the biotin of the diet. As a result the biotin is rendered unavailable to the animal, and biotin deficiency develops, producing the typical "egg white injury" syndrome. Highly concentrated preparations of avidin are more effective as the original egg white in producing the biotin deficiency. Biotin is a normal component of human tissue and excretory products. Lower animals, espe-

cially experimental animals, such as rats, guinea pigs, and chimpanzees will be seen eating their own feces when placed on a high avidin diet. Apparently, lower animals instinctively are aware of their need of biotin. Its function in human nutrition is as yet unknown. A recent report of Dr. Vincent du Vigneaud[22] and his co-workers and Dr. C. P. Rhoads and his co-workers indicate the importance of biotin in the protection of hepatic carcinoma produced by the dye dimethylaminoazobenzene, known as "butter yellow" in experimental animals. Its relation to human malignancy is worth close observation.

CHOLINE

Choline (rat hepatic degeneration factor) is a colorless base which is usually crystallized as the hydrochloride. It is water soluble and stable in acid solution but is split by strong alkali. Choline is present in large quantities in the animal body as a constituent of the phospholipid, lecithin, and of acetylcholine. The pharmacological action of choline and its powerful derivative, acetylcholine, has been exhaustively investigated. These compounds are vaso-dilators; they cause a fall in blood pressure and have a profound secretagogue effect. There is no evidence of toxic symptoms following the administration of 50 mgs. of choline daily for a week. As yet, it has not been completely studied for its physiological properties in man. In dogs and rats choline deficiency causes the development of fatty livers, and choline is said to prevent the excessive deposition of neutral fats and to aid in the synthesis of the phosphatide in the livers of these animals. Comparable deficiency has not been described in man.

PARA-AMINOBENZOIC ACID

P-aminobenzoic acid is one of the new factors of the vitamin B-complex and it was isolated and synthesized by Ansbacher in February, 1941. Chemically it is 1-amino-4-carboxy-benzene with a chemical formula of $C_7 H_7 O_2 N_1$. Structurally this factor simulates the sulfonamides. Para-aminobenzoic acid is a metabolite of bacteria, molds, yeasts, fungi, plants and chicks. It has a chromotrichial factor for rats, mice, minks, and humans; in rats and humans it affects lactation and fertility. It is an anti-sulfonamide and a modifier of melanin formation. P-aminobenzoic acid is a catalyst for tyrosinase activities and hormone protector for adrenalin and stilbestrol. Clinically this factor is non-toxic and apparently is retained in the blood stream for a relatively short period (approximately 8 hours), similar to the sulfonamides. This factor of the vitamin B-complex has been found effective in both hypo-and hyper-pigmentation. On human achromotrichia the drug has brought about return to normal color. The first observation was of a yellowish hue to gray hairs, followed subsequently by increased darkening of the graying hair, with general improved lustre, moisture, and health of the hair. The dosage in human beings has varied from 150 to 400 mgs. in 24 hours, best administered in 100 mg. divided doses with meals and at bedtime. The work is still experimental and further observations will add much to the knowledge of this vitamin B-complex factor.[23]

VITAMIN E

Vitamin E is a tocopherol, a solid alcohol, present in relatively large amounts in wheat germ oil from which it was first isolated. It is also present in considerable amounts in vegetable oils, green vegetables and eggs, and in lesser amounts in a wide distribution of foods. The vitamin has been isolated in pure form and has also been synthesized as alpha-tocopherol by Karrer[24] and his associates in 1938. This factor is a fat soluble vitamin occurring in three forms, alpha, beta, gamma-tocopherol. Of these naturally occurring forms, alpha-tocopherol is the most active in 1-3 mg. amounts, as compared to 5 mg. of the beta and gamma forms. Chemically, vitamin E is related to certain of the sex endocrine hormones. The mechanism by which vitamin E exerts its effects is unknown. Evidence of the importance of vitamin E as an anti-sterility factor for white rats was announced by Evans and Bishop[25] in 1922. Later it was found that the same substance was necessary to prevent testicular degeneration in male rats. No corresponding idiopathic disease has been known in man. Sterility has many causes, and the term "anti-sterility vitamin" used by biologists in referring to vitamin E is a misnomer in clinical medicine since the term "sterility" is commonly reserved for an inability to conceive. The possible corresponding condition in human beings is habitual abortion or threatened abortion. As a matter of fact, the evidence that vitamin E is an essential factor for normal parturition in the human is less convincing now than in the past, and the effect of its lack in the male, also characteristic and definite in the rat, has not yet been clearly demonstrated in

man. Recently a relationship of certain neuro-muscular disorders has been suggested but this has not been clearly confirmed. The pathological changes of vitamin E deficiency in human beings, if any, are unknown.

The diagnosis of vitamin E deficiency is made by inference and therapeutic trial in the absence of characteristic signs and symptoms or laboratory tests. The vitamin is so abundantly supplied in foods that a normal adequate amount should be easily obtained from the normal diet. The vitamin has been given in habitual abortion, in doses of 3-9 mms. (0.2 to 0.6 c c.) in capsules of the pure wheat germ oil. The synthetic alpha-tocopherol may be used in doses of 1-5 mg. daily.

VITAMIN K

Vitamin K (the blood coagulation factor) is a dietary substance which is seemingly essential for the normal clotting of blood. In 1929 Dam[26] observed that chickens fed on inadequate diets developed a deficiency disease in which the outstanding symptom was spontaneous bleeding, apparently due to a low content of prothrombin in the blood. It was noted that although the condition was not cured by any known vitamin it was rapidly alleviated by feeding an unidentified vitamin in soluble substances. Many experiments showed deficiency in coagulation due to decrease in concentration of prothrombin in the blood. The early investigations of Dam[27] in 1935 and Almquist and Stockstad[28] in the same year showed that vitamin K was a fat soluble substance present in the unsaponifiable sterol fraction of hog liver fat and in alfalfa. In 1938 Thayer[29] and his co-workers isolated a crystalline material possessing high vitamin K activity which contained a quinone structure. Soon it was appreciated that vitamin K was not a single compound but occurred naturally in the form of at least two distinct substances which were tabulated as vitamin K_1 and K_2. Both are derivatives of naphthoquinone, 2-methyl-1, 4-naphthoquinone, which is the most active of the synthetic substitutes for vitamin K. The compound may be given orally in conjunction with bile salts or by intramuscular injection in solution in oil. It is insoluble in water. Crystalline vitamin K_1 has no demonstrable toxicity. Although all investigators are not in agreement as to the exact mechanism in the clotting of blood, it is generally accepted that four essentials are necessary for this reaction to take place.

Prothrombin + thromboplastin + calcium ⟶ thrombin

Thrombin + fibrinogen ⟶ fibrin

A hemorrhagic diathesis may result from the lack of any one of these factors required for the normal clotting of blood. Vitamin K is readily absorbed from normal intestinal tracts, providing bile salts are present. In the clinical use of concentrated or synthetic substitutes, the oral route of administration is preferred and bile salts are *always* given with the vitamin. The parenteral route may also be used as an effective therapeutic procedure to produce a rapid rise in the prothrombin content of the blood. Vitamin K is useful only in those hemorrhagic conditions in which abnormal bleeding is due to a low concentration of prothrombin in the blood and is not occasioned by injury to the hepatic cells. This eliminates the application of the vitamin to treatment of the hemorrhagic diathesis of certain types of hepatic and biliary diseases and of the rarer cases of vitamin K deficiencies which are due to faulty diet or absorption difficulties other than those caused by a loss of bile. Vitamin K should be used prophylactically in all jaundiced patients for whom surgery is planned, even if the prothrombin content of the blood is normal. It should be used post-operatively, especially if the prothrombin content of the blood was low before operation.[30] There has been remarkable success with vitamin therapy of hemorrhagic diseases of the new born. This vitamin is ineffective in hemophilia, menorrhagia, metrorrhagia and essential hematuria. It may prove effective, however, in hemorrhagic conditions associated with a low prothrombin content of the blood in which diarrhea and functional deficiencies of the bowel prevent adequate absorption of the vitamin. These conditions include sprue, chronic ulcerative colitis and intestinal short circuiting or obstruction.

In conclusion, it is to be remembered that the science of vitamins is as yet still in its infancy. Advance in chemistry has been rapid; further progress will add much to nutritional fortification. In the unpredictable aftermath of our present war for democracy, the scientific advances produced in the course of military effort may lead to victory in chemical, biological and nutritional benefit to mankind.

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DIADERMIC DRINKING OF WATER

LEO I. HALLAY, M.D.,
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Since the beginning of the second world war a great number of ships has been torpedoed and sunk by submarines. This indiscriminate sinking of ships continues and both passengers and crew members of the sunken ships which have survived the injuries caused by explosion of the submarine torpedoes are forced to continue their travel in open boats. The inadequate supply of drinking water in almost all of these emergencies has now become an urgent problem requiring practical solution. It is the problem of hundreds of people drifting around for days and even weeks in an open boat in the endless spaces of the oceans with very little drinking water at their disposal to quench their thirst and with immense quantities of sea water surrounding them that cannot be drunk, because drinking it tends to increase the torturing sensation of thirst, nauseates them and causes them to vomit. This is due to the fact that sea water is a 2.7 per cent solution of NaCl, is accordingly highly hypertonic and therefore dehydrating when taken by mouth. Great Britain was the first to be faced by this problem in this war and since the involvement of the United States in the war this country is equally interested in a practical solution of it.

In Great Britain, Morley Roberts and George Wherry have suggested that the injection of sea water in the rectum would be of help in these emergencies. This possibility was discussed by the *British Medical Journal*. A leading British physiologist whose name was withheld by the *B. M. J.*, in replying to the *Journal's* query, stated that rectal injection of sea water would be a faulty transaction for the thirsty person, because the hypertonic solution would withdraw fluid from the body and in this way cause a further dehydration. The question

of rectal administration of sea water has not yet been put to a practical test, and the extremely important problem of drinking water for survivors of wrecked ships is at the present time still awaiting solution.

As it seems to me a practical solution of this problem could be obtained by the evaluation of the old experience that water can be drunk by way of the skin. In spite of the fact that this has been known since centuries or maybe thousands of years, there can be no doubt at all that it has been entirely forgotten and nowadays very little can be found in the textbooks indicating the possibility of combating dehydration through immersion of the dehydrated patient in a tub of water. There is nothing simpler, then, when a case of dehydration, e.g., due to infantile diarrhea, has to be treated in the country practice. Subcutaneous infusion of normal saline is too complicated a matter to be done in the wilderness of a roadless country! The first to call my attention to the possibility of drinking water through the skin was the late Professor Schoenenberger, of the Berlin (Germany) Hydrotherapeutic Institute. Claiming it to be a very old experience, Schoenenberger stated that thirst can be quenched almost immediately, when the thirsty person is immersed in a tub of water. My own experiences seem to corroborate this statement. Osmosis does not seem to explain this phenomenon: psychotic patients do not usually become hydremic when kept 8-16 hours in a continuous bath. The skin of avertebrates and lower vertebrates such as fish and amphibia is said to be able to absorb water and electrolytes. Osmosis was found to play an important function in frogs but this purely physical behavior such as diffusion and the membrane function has practically disappeared in the philogeny. Neither can osmosis alone explain the fact that the juices of the plankton which are small sea animals are relatively fresh water. These microscopic sea animals are continuously surrounded by hypertonic sea water; nevertheless, they do not seem to die on dehydration or salt poisoning. They have been recommended as a fresh water source for ship wrecked.

Survivors of a wrecked ship use to develop a great deal of ingenuity in their attempts to solve the drinking water problem. One of the sources for fresh water at sea is rain water, which the survivors try to collect. According to Robert Trumbull, of the *New York Times,* 3 men of the U. S. Pacific Fleet, while forced to sail 1,000 miles in a rubber life raft 8 feet by 4 overall, were trying to obtain drinking water in the following way: the method of catching rain water was for one man to hold out an oar pocket of the raft to make a receptacle 20 inches by 8; the other 2 would hold the rags made cut of their drawers until they were soaked then wring them out. "We all had a good drink", said one of the survivors. Well, it looks like they could have saved some of their rain water by realizing that rain water pouring down on their skin all over the body is being absorbed by the thirsty skin.

In most of the cases the survivors are not fortunate enough to have rain water pouring down upon them either to be caught into the drawers or to be drunk through the skin. So, according to the *New York Times* (U. P.) report of March 24, 1942, a 17-year-old boy, the sole survivor of a tanker crew of 33, watched the last 10 die of thirst in the life boat. According to the sole survivor, "We hung on to a capsized boat until the next morning when we righted it, but we had lost all our drinking water." The 10 survivors in the boat drifted for 21 days afterwards and the 17-year-old boy was the sole survivor to be rescued alive. As he stated, one man's final request was to be dropped in the sea with his mouth open—so he could get all he wanted to drink.

Taking it for granted that fresh water can be drunk through the skin, the question now arises, whether sea water which, as stated, is a 2.7 per cent solution of sodium chloride in water, can be made usable to quench the thirst, i.e., whether sea water when brought in contact with the skin would result into a selective absorption of water without incorporation of the sodium chloride dissolved in it.

Let's begin with the antithesis: drinking sea water through the skin would cause dehydration. Proof, a sailor has told me that after swimming one mile in the sea he was thirsty, and had to drink fresh water. According to Captain Louis H. Roddins, the editor of the *Naval Bulletin,* this question has been put by the Navy to Dr. Olmsted of the Physiology Department of the University of California Medical School, who stated that, "It is not the amount of water to keep a person alive which is of importance, but we have to keep away the amount of salt which may be sufficient to cause poisoning." This means dehydration on the grounds that the loss

by osmosis would produce depletion or withdrawal of fluids from the tissues.

Now the thesis: drinking sea water through the skin would not cause dehydration. The 17-year-old boy, as reported by the *New York Times,* hung on the capsized boat all night long, and was rescued 3 weeks later alive. Osmosis would have caused a dehydration in a considerably shorter time than the immersion in sea water for the duration of one night. Osmosis would not explain the fresh water body fluids of the plankton animals. According to Fantus, in normal human skin the only layer of living cells through which substances may be absorbed with any degree of ease is the lining of the sebaceous glands; and due to the fact that these glands are filled with fat, lipophile, fat soluble or fat solvent substances can penetrate into or through them; hydrophile bodies only when presented in a fatty medium. Nonvolatile, hydrophile bodies in aqueous solution are practically *not* absorbed from the unbroken skin. Now, sea water is a solution of the hydrophile, nonvolatile body, sodium chloride, in water and accordingly the sodium chloride of the sea water should not immediately be absorbed by the unbroken skin, which would explain why the 17-year-old boy was able to remain all night long in sea water without being dehydrated and die with salt poisoning.

The synthesis accordingly, would be: sea water can be drunk through the unbroken skin of a thirsty person. The skin of a thirsty person when immersed into sea water would immediately absorb the water and for some time be able to discard the sodium chloride dissolved in it.

The following conclusions appear reasonable:

(1) Fresh water can be drunk through the dehydrated skin. (2) A survivor of a wrecked ship may be able to quench the thirst by immersing the body in sea water, which would result in absorption of the water without immediate incorporation of the sodium chloride contained in it.

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CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient, a twenty-five year old colored primipara, first visited a physician during the third month of pregnancy but failed to return for additional prenatal care. When near term she complained to her family that she hadn't felt well for a few days. On the afternoon of April 11th, when the family returned home, the patient was found on the floor comatose and having convulsions. A midwife and physician were called and the patient was referred to a hospital as soon as possible.

She was admitted to a hospital comatose and still having convulsions. Blood pressure 124/90. Examination showed a term pregnancy not in labor. She was given 20 cc. of 20 per cent Magnesium Sulphate intravenously, digitalis gr. 6, and nembutal gr. 3. The patient was not even put in bed, but was taken directly to the operating room where a Cesarean section was done under spinal anesthesia. She was delivered of full term twins, one alive and one stillborn. She died on the operating table about fifteen minutes after completion of the operation. Autopsy was not performed.

COMMENT

This has been classified as a preventable obstetrical death. The factors which justify this classification are an absence of adequate prenatal care and the failure to employ an approved method of therapy in the treatment of eclampsia.

This patient after admission to the hospital was treated by the old radical method of immediate delivery. The radical method of treatment in eclampsia went out of vogue at the end of the first World War. The highest death rates in eclampsia have been in those delivered immediately whether by accouchement forcé or Cesarean section. These operative procedures carry a considerable risk of their own, even when done on essentially normal patients and when carried out on a seriously ill eclamptic patient, who is an extremely poor operative risk for any procedure, the mortality is extremely high. Occasionally

an abdominal delivery may have to be done on an eclamptic patient for some other indication, but it is always done in spite of eclampsia and never because of eclampsia. Even then a period of medical therapy is usually possible before the operative procedure has to be carried out. One member of the Committee made the following comment—"Eclampsia-Cesarean Section-Spinal Anesthesia, a combination that would have given DeLee a fit." It should, however, be pointed out that the eclamptic patient stands inhalation anesthesia poorly, and any other type of anesthesia is better than inhalation anesthesia in eclampsia.

Conservative treatment would have offered this individual a much better chance of survival. Sedation with morphine, magnesium sulphate, barbituric acid derivatives or paraldehyde, hypertonic glucose solutions intravenously, digitalization when there are evidences of beginning myocardial failure, aspiration of secretions from the pharynx, and oxygen administration are the essential principles at present in the conservative or medical treatment of eclampsia. Delivery of the child by the simplest methods and with as little disturbance to the patient as possible is usually conducive of the best results. If after a reasonable trial of medical treatment, the condition does not improve and it is felt that labor must be induced, this is most simply accomplished by rupture of the membranes.

In view of the absence of prenatal care and because of the failure to employ an approved conservative method of treatment it is felt that this should be considered a preventable death.

MENTAL HYGIENE ACTIVITIES

Mental Hygiene at Work

On Saturday afternoon, July 18, the Mental Hygiene Society of Virginia held a most interesting and instructive meeting in Marion. Dr. Joseph R. Blalock, Superintendent of the Southwestern State Hospital, and Dr. Joseph E. Barrett were hosts to about 150 persons, made up of physicians, nurses, social workers, educators, clergymen, and many others. The meeting was held in the new and attractive auditorium and recreation building recently completed for the Southwestern State Hospital.

This was the first meeting of the Society in southwest Virginia and, judging from the attention and interest shown by those present, it will not be the last.

Dr. Frank H. Redwood, President of the Society, was unable to be present, so Dr. David C. Wilson, that very active and helpful past president, presided. In brief, the program which was carried out in its entirety was as follows:

THEME: "Mental Hygiene at Work".

ADDRESS: "A Historical Resume of the Mental Hygiene Society of Virginia, Its Purpose and Program"—F. W. Gwaltney, Executive Secretary of the Society and of the State Hospital Board, Richmond.

ADDRESS: "Growing Interest in Mental Hygiene"—Dr. R. W. Garnett, Director of Public Welfare, Danville.

ADDRESS: "Adult Attitudes During Wartime"—Dr. David C. Wilson, Professor of Psychiatry, University of Virginia Medical School, Charlottesville.

ADDRESS: "A New Method of Preventive Psychiatry in Public Schools"—Dr. M. A. Tarumianz, Director of Mental Hygiene Clinics, State of Delaware, and Superintendent of the Delaware State Hospital.

DISCUSSANT: Dr. Joseph E. Barrett, State Supervisor of Out-Patient Clinics and Clinical Director of the Southwestern State Hospital, led the discussion on all of the papers. A number of those present participated freely.

The Society was most fortunate in securing the services of Dr. Tarumianz. His subject was developed and presented around three main thoughts:

1st: "What effect will a total war have on the individual?"

2nd: "How can we educate and train our children so that they will meet any problem which might arise without conflict?"

3rd: "How will we maintain and even improve the standards of our Mental Hygiene Clinics and our Hospitals for the care of the mentally ill during the period of international stress?"

As to the first, Dr. Tarumianz stated that from the experience in the first World War no severe increases may be expected in the incidence of mental disease

during the period of actual hostilities. This, he says, occurs "when the acquired and more civilized aspects of life are threatened, rather than when the more primitive factors of life are involved. Thus 20 years ago the greatest increase in mental disease occurred during the period of economic readjustment after hostilities had ceased." He gave as a recent example the experiences in Spain, which seem to clearly demonstrate that the individual was far more disturbed over whether he and his family might starve from lack of food, or be ruined economically, than in the possibility that he or his family might be killed or wounded during bombardment, or that he might be called to serve at the front.

The first problem led very naturally into the second because of the natural and inevitable effect of all of this upon the children and young people. Dr. Tarumianz stated that, from his experience in Delaware with a most highly developed system of mental hygiene clinics, children must be taught to overcome adverse personality traits and strengthen desirable ones if maladjustment is to be avoided. He further says "that he was convinced that if we are to carry on preventive work efficiently the laws of Mental Hygiene must be taught to children beginning not later than the 7th grade, and that to carry out such a program the educators must be brought into closer cooperation with the psychiatrist. At the present time almost all schools give instructions in regard to physical health, public safety, and dental hygiene, and there seems to be no reason why mental hygiene should not also take its place in the school system." This has been undertaken in Delaware and more will be heard about it later.

As to the third, this is a most pertinent and urgent question and one that every interested person and Mental Hygienist should be giving serious concern. The experience during and after the last war was tragic. Steps should be taken now to prevent this tragedy from recurring in Virginia mental institutions, and plans should be made to inaugurate a system of mental clinics as soon after the war as may be possible.

F. W. GWALTNEY, *Executive Secretary,*
Mental Hygiene Society of Virginia.

CURRENT INFORMATION ON SYPHILIS

Sponsored by
THE COMMITTEE ON SYPHILIS CONTROL
MEDICAL SOCIETY OF VIRGINIA

Laboratory Diagnosis of Syphilis—Part II

SEROLOGICAL EXAMINATIONS

The proper collection and handling of blood specimens for serologic examination cannot be too strongly emphasized.

It is desirable that specimens of blood be obtained from the patient before the ingestion of food for the day, or at least three hours after the last meal, the theoretical ground for this stipulation being the presence of excess lipoid in the blood after meals. This renders the serum slightly cloudy, reducing the accuracy with which the test can be read, and some think it predisposed toward false positive reactions. Craig and Nichols have shown that the ingestion of alcoholic beverages within 24 hours of securing a blood specimen, may inhibit a positive reaction, resulting in a negative test. If blood is not aseptically drawn, bacterial contamination is occasionally responsible for false positive reactions. However, the degree of contamination and delay must be considerable, so the danger of this factor is not great.

The importance of serologic tests as an aid in the diagnosis and treatment of syphilis cannot be over estimated, but of almost equal importance is the intelligent interpretation. It is the duty of the physician to correlate the laboratory report with his history and clinical findings in arriving at a diagnosis, or as to the significance of the test during treatment. The test is not infallible, for there are numerous sources of error, beginning with a possible improper labeling at the source and in the laboratory due to handling of many specimens. Also there are inherent errors in the technique of the several Wassermanns and precipitation tests. Treatment should never be started on the basis of a single unsupported positive test because of the obvious hazards. On the other hand, it is indefensible to delay treatment of a patient with a positive darkfield until the return of a serologic test, because the diag-

nosis of syphilis does not depend on the latter.

Assuming that technical error has been excluded, what construction can be placed on a persistently positive reaction in an untreated patient?

There is not the slightest doubt that the older Wassermann procedures, also the modernized serologic tests produced non-specific positives. However, in the decade immediately following the development of the Wassermann, all sorts of conditions and diseases were reported as disposing to positive reactions in the absence of syphilitic infection. The earlier reports have largely been discredited by carefully controlled studies, but their point of view has been perpetuated by frequent repetition. Stokes lists eight conditions that cause non-specific positives; namely, yaws, recurrent fever, trypanosomiasis, spotted fever, lepra, scarlet fever, ulcus tropicum, endocarditis, mononucleosis, septicemia and malaria. Those causing occasional false positives are further stated to be: ulcus molle with buboes, lupus erythematosus acutus, leukemias, pernicious anemia, mycosis fungoides, certain skin tuberculosis, and anesthesia. Numerous other skin diseases and pregnancy are listed as disputed causes.

Moore states that there is not the slightest evidence that tuberculosis, pregnancy, diabetes or ether anesthesia cause the appearance of positive reactions in the absence of syphilitic infection. He further comments that jaundice, hyperpyrexia, and hemorrhagic diseases have not been proven conclusively to cause false reactions, and if they do occur they are uncommon.

In general, excluding tropical diseases, a persistent positive reaction may be considered as satisfactory evidence of syphilitic infection.

Wassermann fastness, or a persistently positive Wassermann may be described in early syphilis as the failure of a serologic test to reverse to a negative within a period of twelve months, under adequate antisyphilitic treatment. In latent syphilis the time interval is lengthened to 24 months or the approximate time required to administer 40 arsphenamine and 40 heavy metal.

The degree of positivity and the length of time a serologic test may remain positive or partially positive, depends upon the sensitivity of the test as well as upon the amount of patient's serum used, in the several laboratories.

The study of the Clinical Cooperative Group shows that Wassermann fastness in early syphilis is largely due to the system of treatment employed. It occurs less frequently when continuous treatment is employed, and the greatest when the intensive intermittent scheme is used.

In a patient with early syphilis, failure of the serologic test to reverse in six months of continuous treatment strongly suggests the possibility of asymptomatic neurosyphilis. However, should the spinal fluid be normal on examination, the majority of the fixed reactions will become negative in one year of continuous therapy.

Wassermann fastness in late syphilis causes much concern and in some cases results in overtreatment. Studies on this question by Stokes showed that the majority of cases had definite syphilitic lesions present; in the order of frequency, affecting the central nervous system, the cardiovascular apparatus, and bones. Next in frequency, is a considerable group of patients with late congenital syphilis.

If the apparent cause of the persistently positive blood test is any of those mentioned, the proper treatment to be instituted in the treatment of these conditions and no attention whatever need be paid to the question of ultimate reversal of the serologic test. Treatment does not aim at a negative reaction but rather to relieve symptoms, prevent clinical progression and prolong life.

Conflicting serologic reports constitute a perplexing problem, and one frequently encountered at the present time, when most laboratories do at least two types of tests, and when the sensitivity of a test in two different laboratories varies within such wide limits.

The intra-laboratory check of the Wassermann reaction by one of the precipitation tests is not based entirely on a desire to utilize two tests of varying sensitivity. On the contrary it is based on the facts that some syphilitic sera containing an excess of native amboceptor will give a false negative result. or due to mild bacterial contamination or to the presence of unknown substances, an anticomplementary result, with the Wassermann reaction; and that both these sources of error are obviated in the precipitation test.

In general, conflicting serological findings may be considered to have the same significance as a single doubtful report. Subsequently, a more careful history frequently elicits a definite history of syphilitic infection with or without treatment. The tests should be repeated a number of times if necessary,

until the possibility of doubt can be eliminated.

The provocative Wassermann is sometimes of value in diagnosis if there is a doubtful reaction and when a lesion is thought to be syphilitic and the Wassermann is negative. A decision can sometimes be made by observing the effect on the blood Wassermann of a single injection of 0.3 gram arsphenamine or 0.6 gram neoarsphenamine. The blood Wassermann should be quantitatively titered at the time of the injection and every other day thereafter for fourteen days. The test is positive if reagin appears in a previously negative blood, or if it increases sharply in amount in a blood previously doubtful or positive. The increase of reagin, if it occurs at all, begins about the third day and reaches its maximum about the tenth day, subsequently subsiding.

Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for July 1942, compared with the same month in 1941, and for the period of January through July 1942, compared with the same period in 1941 follows:

	July 1942	July 1941	Jan.-July 1942	Jan.-July 1941
Typhoid and Paratyphoid Fever	25	26	100	97
Diarrhea and Dysentery	1,170	964	2,083	1,633
Measles	125	911	4,749	33,465
Scarlet Fever	30	26	739	908
Diphtheria	22	13	236	226
Poliomyelitis	5	10	13	22
Meningitis	12	2	119	67
Undulant Fever	3	0	16	7
Rocky Mountain Spotted Fever	13	6	27	15
Tularaemia	4	0	27	19

THE OLDER PHYSICIAN'S RESPONSIBILITY

Since the attack on Pearl Harbor, increasing numbers of Virginia pyhsicians have entered the armed services. This situation has resulted in greatly diminishing the availability of professional care and advice in many areas of the State.

Physicians who have served their communities faithfully and who, by force of years, have let the younger man shoulder most of the responsibilities, again will likely be required to engage actively in the practice of medicine.

These physicians not only will be called upon to carry out the procedures necessary for the treatment of illness, but to prevent illnesses from occurring. This latter phase of the situation is one of the most important problems to be faced. The great industrial war effort geared to maximum output has pooled many thousands of workers. These workers have been drawn not only from every community in Virginia but from surrounding States, many far distant. A number of the areas outside the State do not have as comprehensive public health regulations as does Virginia; in other areas, such regulations have been adopted somewhat recently. Consequently many adults never have been vaccinated against smallpox, as pre-school vaccination was not required. One exposure to an active case of smallpox could incapacitate hundreds of industrial workers. Moreover, there is no assurance that this disease would continue to manifest itself in a mild form.

It is the physician's duty to urge vaccination and properly vaccinate those who do not exhibit a recent scar. Fresh, properly refrigerated vaccine should be used, the multiple pressure method should be employed, and of course no shield or dressing should be applied to the vaccinated area.

This same migration of workers has forced their families to accompany them, many of whom live in congested areas and under poor hygienic conditions. Rural babies anld children formerly in contact only with family members now are living in crowded quarters and mingle with many strangers daily. The possibility of such children contracting diphtheria in this way has been increased greatly.

Children can be protected against diphtheria before exposure by actively immunizing against the disease with diphtheria toxoid. At six months of age two 1 cc. doses of alum precipitated toxoid given a month apart and another injection before entering school will protect a child in a great majority of instances. For children who have been actually exposed to the disease, passive immunization may be resorted to. As is well known, this calls for the injection of diphtheria antitoxin. When the child can be seen daily by the physician the use of antitoxin may be deferred until needed. This precaution will prevent many persons becoming sensitive to serum.

The proper administration of these two principles of immunization should greatly reduce the risk we face this coming year.

Military Medicine

Virginia Doctors in Service
Supplement 1

In our effort to have on record the names of all Virginia doctors in the medical corps of the various branches of the Services, we give below the first supplement to the list in the July MONTHLY. It will be appreciated if any reader will advise of names which have been omitted that they may be listed in the next Supplement.

Names are listed alphabetically with home addresses. Rank and service are not indicated as this information is incomplete.

MEMBERS OF MEDICAL SOCIETY OF VIRGINIA

Dr. W. Linwood Ball, Richmond.
Dr. W. Allen Barker, Roanoke.
Dr. Lee Scott Barksdale, Hopewell.
Dr. Staige D. Blackford, University.
Dr. George S. Bourne, Roanoke.
Dr. Wilbur M. Bowman, Petersburg.
Dr. Charles M. Caravati, Richmond.
Dr. John C. Crawford, Norfolk.
Dr. Hal Davis, Roanoke.
Dr. E. C. Drasch, University.
Dr. Patrick H. Drewry, Richmond.
Dr. Charles A. Easley, Jr., Danville.
Dr. W. J. Ellis, Covington.
Dr. Edmund M. Ellerson, Staunton.
Dr. Herman Farber, Richmond.
Dr. Frederick O. Fay, Norfolk.
Dr. Burton E. Field, Richmond.
Dr. G. Slaughter Fitz-Hugh, Charlottesville.
Dr. Harry M. Frieden, Norfolk.
Dr. C. F. Gaylord, Staunton.
Dr. Thomas A. Gibson, Winchester
Dr. E. S. Groseclose, Lynchburg.
Dr. John R. Hamilton, Nassawadox.
Dr. Walter G. Hardy, Bedford.
Dr. William R. Hill, Richmond.
Dr. H. B. Holsinger, Farmville.
Dr. Louis A. Houff, Clifton Forge.
Dr. H. G. Hudnall, Covington.
Dr. John O. Hurt, Roanoke.
Dr. H. Bryan Hutt, Alexandria.
Dr. Herbert C. Jones, Petersburg.
Dr. Edwin L. Kendig, Richmond.
Dr. Prentice Kinser, Danville.
Dr. Theodore Kohn, Richmond.
Dr. Louis S. Leo, Norfolk.
Dr. Bernard Lidman, Norfolk.
Dr. Luther B. Lowe, Crows Landing, Calif.
Dr. William M. Lueders, Jr., Staunton.
Dr. John O. McNeel, University.
Dr. Charlie F. Manges, Blacksburg.
Dr. Rees Morgan, Roanoke.
Dr. Sigmund Newman, Vienna.
Dr. I. M. Nuckols, Mt. Sidney.
Dr. Boyd H. Payne, Staunton.
Dr. Thomas B. Payne, Fredericksburg.
Dr. H. M. Price, Martinsville.
Dr. William V. Rucker, Bedford.
Dr. Robert R. Rudolph, Roanoke.
*Dr. E. Bowie Shepherd, Richmond.
Dr. Reynold C. Siersema, Richmond.
Dr. William L. Sibley, Roanoke.
Dr. Leo Solet, Arlington.
Dr. Harry B. Stone, Jr., Roanoke.
Dr. David B. Stuart, Roanoke.
Dr. Girard V. Thompson, Chatham.
Dr. Glenn L. Walker, Richmond.
Dr. B. K. Weems, Waynesboro.
Dr. Edward H. Williams, Richmond.
Dr. Fletcher J. Wright, Jr., Petersburg.
Dr. Harry Blair Yeatts, Danville.

NON-MEMBERS

Dr. Homer Bartley, Roanoke.
Dr. John G. Coleman, University.
Dr. James W. Culbertson, University.
Dr. Leon R. Culbertson, University.
Dr. V. C. Daniels, Boydton.
Dr. Robert G. Dunn, Richmond.
Dr. W. D. R. Driscolle, Richmond.
Dr. Robert R. Gatling, Norfolk.
Dr. Albert R. Gillespie, Tazewell.
Dr. Kenneth B. Grim, University.
Dr. John L. Guerrant, University.
Dr. Beverly D. Hairfield, University.
Dr. Leo E. Hayes, Richmond.
Dr. William Russell Jones, Jr., Richmond.
Dr. Charles Briel Keppler, Richmond.
Dr. J. Richmond Low, University.
Dr. John Rogers Mapp, University.
Dr. James C. Martin, Martinsville.
Dr. Henry W. Mayo, Jr., University.
Dr. John Richard Morris, Jr., University.
Dr. Thomas W. Murrell, Jr., Richmond.
Dr. Joseph C. Parker, Richmond.
Dr. Albert G. Roode, Bedford.
Dr. S. L. Rucker, Moneta.
Dr. Edwin W. Shearburn, University.
Dr. John Edgar Stevens, Richmond.
Dr. W. Norman Thornton, University.
Dr. W. Edgar Waddell, Lexington.
Dr. H. B. Webb, Waynesboro.

*Previously listed in error as Colony.

PROGRAM

(PRELIMINARY)

MEDICAL SOCIETY OF VIRGINIA

October 5, 6 and 7, 1942

Roanoke, Virginia

Headquarters—HOTEL ROANOKE

(All sessions in Hotel)

BUSINESS SESSIONS

Monday, October 5

10:30 A.M.

Registration

11:00 A.M.

COUNCIL—Parlor 224

2:30 P.M.

HOUSE OF DELEGATES—Parlors A, B, C, and D

Tuesday, October 6

HOUSE OF DELEGATES—Time and place to be announced

SCIENTIFIC SESSIONS

Monday, October 5

8:00 P.M.

GENERAL SESSION

Ballroom

Call to Order—W. L. POWELL, M.D., General Chairman, Committee on Arrangements

Invocation—REV. A. H. HOLLINGSWORTH

Announcements

Introduction of President

President's Address — The Year's Activities — ROSHIER W. MILLER, M.D., Richmond

Memorial Hour—J. BOLLING JONES, M.D., Petersburg, Chairman, Membership Committee

Address—*Invited Guest,* JAMES E. PAULLIN, M.D., Atlanta, Georgia, Professor, Clinical Medicine, Emory University; Member, Federal Procurement and Assignment Board; President, American College of Physicians; President-Elect, American Medical Association

Tuesday, October 6

9:30 A.M.

SECTION MEETINGS

Section A—Ballroom

Some of the Do's and Don't's in the Treatment of Fractures, with Special Reference to the Rural Practitioners Whose Burdens and Responsibilities Will Be Increased by the National Emergency—T. JEFFERSON HUGHES, M.D., Roanoke

The difficulty in securing services of orthopedists due to Army service; emergency treatment; preparation for and proper transportation of patient to hospital; methods of reduction, treatment.

Discussion—BERNARD H. KYLE, M.D., Lynchburg

Leukorrhea, Its Cause and Treatment—WILLIAM BICKERS, M.D., Richmond

A new classification and a new approach to therapy of leukorrhea, illustrated by Lantern Slides.

Discussion—M. P. RUCKER, M.D., Richmond

The Clinical Significance of the Serum Proteins—BENJAMIN M. KAGAN, M.D., Richmond

The practical significance of serum protein concentration from standpoint of physiology, differential diagnosis, prognosis, and treatment; report based on seven years study of this subject.

Discussion—SAMUEL A. ANDERSON, M.D., Richmond

Acute Cirrhosis of the Liver—T. DEWEY DAVIS, M.D., Richmond

The purpose of this paper is to emphasize the occurrence of acute changes in the liver often associated with the excessive use of alcohol and to outline a program of treatment which gives good results.

Discussion—BLANTON P. SEWARD, M.D., Roanoke

The Eyes as Portals of Entry for Certain Airborne Infectious Diseases—K. D. GRAVES, M.D., Roanoke

Because of the location of the eyes and the ready passage of matter from the eyes through the lachrymal ducts, they play an important part in transmitting droplet and airborne infections.

Discussion—FRED E. HAMLIN, M.D., Roanoke

Rheumatic Fever and Rheumatic Heart Disease in Virginia—PAUL D. CAMP, M.D., and LOUISE F. GALVIN, M.D., Richmond

Discussion—J. EDWIN WOOD, JR., Charlottesville

9:30 A.M.

Section B—Parlors A, B, C, and D

Hypertensive Arterial Disease—ERNEST L. COPLEY, M.D., Richmond

Hypertensive arterial disease occurs in all ages. It is encountered in college freshmen and its incidence increases with age. It was the underlying cause of myocardial failure and death in nearly fifty per cent in a group of cardiac deaths studied. One hundred cases under treatment are analyzed.

Discussion — J. MORRISON HUTCHESON, M.D., Richmond

A Further Report on the Use of Radium in the Benign Conditions Causing Uterine Bleeding—W. LOWNDES PEPLE, M.D., Richmond.

The limitation for the use of any form of irradiation must be clearly understood. Selection of cases requires thorough and painstaking examination. If certain rules are followed and proper technique employed, excellent results with few complications may be expected.

Discussion—ALFRED P. JONES, M.D., Roanoke

Further Experience with Tubal Division in Salpingitis—PHILIP JACOBSON, M.D,. Petersburg

Division of the fallopian tubes is superior to removal in those cases of salpingitis which come to operation as the endocrine system is left intact. Experience with average, severe and reoperated cases is cited.

Discussion—PAUL DAVIS, M.D., Roanoke

The Clinical Manifestations of Colitis and Its Treatment—LINWOOD D. KEYSER, M.D., Roanoke

Pathologic types of colonic inflammation are given, with their symptoms and clinical course. This includes also a discussion of medical and surgical treatment.

Discussion—

Benign and Malignant Lesions of the Urachus—M. L. DREYFUSS, M.D., Clifton Forge

Evolution and involution of the urachus are discussed. Benign and malignant lesions are described and illustrative cases are presented. Accompanied by lantern slides.

Discussion—A. I. DODSON, M.D., Richmond

Surgical Treatment of Orbital Tumors—CLAUDE C. COLEMAN, M.D., Richmond

Tumors that encroach upon the orbit are rather frequent lesions in a neurosurgical clinic. These orbital tumors frequently have an intracranial origin and affect the orbit secondarily, causing exophthalmus. The main cause of this paper is to emphasize a method of approach in the surgical treatment of these tumors. Cases are reported, illustrating the surgical procedure, types of tumor and results.

Tuesday, October 6

2:30 P.M.

GENERAL SESSION

Ballroom

Treatment of the Mental Diseases Related to the Involutional Period—DAVID C. WILSON, M.D., Charlottesville.

Statement of result obtained in cases diagnosed as Involutional Melancholia, with discussion of nature of this disorder. Differentiation from other affective disorders. Special attention to use of shock therapy in depressions of aged.

Discussion—BEVERLEY R. TUCKER, M.D., Richmond

Address—Amebic Dysentery—*Invited Guest*, JULIAN M. RUFFIN, M.D., Durham, North Carolina, Professor of Medicine, Duke University, Medical School

Lacquer Dermatitis—WARREN T. VAUGHAN, M.D., Richmond

Allergic dermatitis due to nail polish, furniture lacquer, and similar causes. Relationship to poison ivy. Kodachrome illustrations.

Discussion — WYNDHAM B. BLANTON, M.D., Richmond

Cardio - Diaphragmatic Syndrome — WILLIAM B. PORTER, M.D., Richmond

The study is concerned with diaphragmatic lesions and abnormal function of the diaphragm accompanied by symptoms simulating angina pectoris. The differentiation of the symptoms from those of true heart disease is outlined.

Discussion—HUGH H. TROUT, M.D., Roanoke

Tuesday, October 6

7:00 P.M.

Banquet, Floor Show and Dancing in Ballroom (Subscription)

Wednesday, October 7

9:30 A.M.

GENERAL SESSION

Ballroom

Adams Stokes Syndrome as a Complication of Myo-Cardial Infarction: Report of Two Cases Re-

sulting from Different Underlying Mechanisms —JULIAN R. BECKWITH, M.D., Clifton Forge.

Review of literature on this subject and discussion of underlying pathological physiology. Two cases presented with illustrations showing electrocardiograms before and after institution of therapy.

Discussion—J. EDWIN WOOD, JR., M.D., Charlottesville.

Address — *Invited Guest,* ROBERT L. BENNETT, M.D., Warm Springs, Georgia, Director, Post Graduate School of Physical Therapy, Georgia Warm Springs Foundation

The Physician's Responsiility in Planned Parenthood—H. HUDNALL WARE, M.D., Richmond

This is a brief report of the work in the Maternal Welfare Clinic of the Medical College of Virginia, and discusses the plan of selecting patients, and the contraceptives most frequently used.

Discussion—T. J. WILLIAMS, M.D., Charlottesville

Epidemiologic Studies in Syphilis—LEWIS W. MCILHANY, M.D., and DUDLEY C. SMITH, M.D., Charlottesville.

Syphilis is more infectious during early or acute phases of the disease. Epidemiologic studies are not difficult and should be carried out by all physicians. Many early cases would thus be discovered, placed under treatment, and thereby rendered non-infectious.

Discussion—
THOMAS W. MURRELL, M.D., Richmond
R. D. KIMBROUGH, M.D., Norfolk

The Care of the Mentally Sick in a General Hospital—R. FINLEY GAYLE, M.D., Richmond

The purpose of this presentation is to outline the care of the early psychiatric problems of the General Hospital and discusses the types of patients admitted, therapy used, the nursing care and results obtained.

Discussion—J. ASA SHIELD, M.D., Richmond

1:15 P.M.

Luncheon—Catawba Sanatorium

2:15 P.M.

The Staff at Catawba Sanatorium has kindly arranged this program in conjunction with the Society of Chest Physicians of Virginia.

The Effect of Heparinization on Post Radiation Tissue Changes in the Lung: An Experimental Report—FLOYD BOYS, M.D., Charlottesville.

Report on Culture Work of Microscopically Negative Sputum for Tubercle Bacilli for a Period of Eight Years—J. B. NICHOLLS, M.D., and A. W. BENGSTON, M.D., Catawba Sanatorium

Bilateral Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis—L. R. BROOME, M.D., Catawba Sanatorium

Special Luncheon Meetings

Tuesday, October 6

1:00 P.M.

ALUMNI ASSOCIATION OF THE MEDICAL COLLEGE OF VIRGINIA

VIRGINIA ORTHOPEDIC SOCIETY—Business Session

VIRGINIA PEDIATRIC SOCIETY—Business Session

VIRGINIA UROLOGICAL SOCIETY—Business Session

VIRGINIA SECTION, AMERICAN COLLEGE OF PHYSICIANS

Wednesday, October 7

SOCIETY OF CHEST PHYSICIANS OF VIRGINIA—Catawba Sanatorium

SCIENTIFIC EXHIBITS

To be announced.

COMMERCIAL EXHIBITORS

	Space No.
C. B. Fleet Company	2
Gilliland Laboratories	3
Eli Lilly Company	5
Peoples Drug Stores	6
Van Pelt & Brown	7
Camel Cigarettes	8 & 9
Mead Johnson Company	10
Ciba Pharmaceutical Products	12
Valentine Meat Juice Company	13
Borden Company	14
A. S. Aloe Company	15
Powers & Anderson	16
E. R. Squibb & Sons	17
French, Kline & French Laboratories	18
Liebel-Flarsheim Company	20
John Wyeth & Company	21
General Electric X-Ray Corporation	22
Philip Morris and Company	23
Ortho Products	24

Reports for 1942 Annual Session Medical Society of Virginia

The Council

Three meetings of the Council have been held since the last annual meeting of the Society—the regular winter meeting on January 8th, minutes of which are published in the February issue of the MONTHLY, pages 101 and 102; and two special meetings—May 19th, page 393, July MONTHLY, and June 29th, page 460, August MONTHLY.

Executive Secretary-Treasurer

The fact that many members have entered the Services in the past six months has perhaps increased rather than diminished the detail work of this office. To the time of going to press with this report, we have been advised that 243 members and many Virginia doctors not connected with the Society are in the Medical Corps of some branch of the Service. It is the aim of this office to publish in the MONTHLY the names of these doctors so as to have as complete a record as possible, and the help of all members is solicited to this end.

Among those who have entered the Service and whose places had to be filled for a continuance of the work are Dr. Andrew D. Hart, councilor of the eighth district, who has been succeeded by Dr. H. B. Mulholland; Dr. Walter B. Martin, chairman of the Department of Clinical and Medical Education, whose place is being filled by Dr. J. W. Preston; and Dr. John Hundley, chairman of the Medical Economics Committee, who has been succeeded by Dr. Guy Fisher.

The membership now numbers 1,912, an increase of 16 over last year's report. There have been added 79 new members and 5 reinstatements; the losses are 32 deaths, 18 dropped, and 18 resignations.

There is no change in the number of component societies. The forty-eight represent ninety-one counties and the city of Alexandria.

Virginia had its full representation in the House of Delegates of the American Medical Association in June, the delegates being Dr. Walter B. Martin and Dr. J. M. Emmett, who served in place of Dr. Carrington Williams.

The Society was invited to have its 1941 representatives at a special meeting of the U. S. Pharmacopoeial Convention, last Spring, and Dr. Harvey B. Haag attended, Drs. J. A. Waddell and H. W. Miller, the other delegates, being unable to go.

This office was advised by Governor Darden of his re-appointment of the nine members of the State Board of Medical Examiners as recommended at the last House of Delegates.

In addition to the committees listed on pages 727-8 of the December 1941 MONTHLY, the President appointed Dr. W. E. Bray of the University of Virginia as chairman of a Committee to Make a Study of Clinical Laboratories in Virginia, this being in accordance with a recommendation of the Committee on Syphilis Control, at the last annual meeting.

The Society's books will be audited at the end of the financial year (September 30th) and a detailed statement will be presented the Council at its first meeting.

In spite of the additional responsibilities which have come to members during the past year, there has been an excellent spirit of cooperation.

This report would not be complete without a word of commendation for the splendid work done by Dr. Hugh H. Trout, chairman of Procurement and Assignment of Medical Officers for the State of Virginia, for the able assistance given him by the councilors and other doctors asked to assist in this work, and the fine response of Virginia doctors.

AGNES V. EDWARDS,
Executive Secretary-Treasurer.

Publication and Program

This committee has held two meetings to discuss the policies of the publication of our official organ, the VIRGINIA MEDICAL MONTHLY, and to arrange the program for the Roanoke meeting. In our wish to maintain the high standard of the journal, we have from time to time published special articles which we felt should prove of unusual interest to the membership of the Society and we have continued the guest editorials, a feature started at the close of last year.

At its winter meeting, the Council voted a special appropriation for the editor to arrange for securing and publishing all laws pertaining to the practice of medicine in Virginia, in accordance with a plan used by the *Wisconsin Medical Journal* in the publication of its "1942 Blue Book". A capable attorney was secured to prepare such material but, owing to unforeseen circumstances, the work has been delayed. It is our hope, however, that this work may be completed and published in the near future.

As was to be expected, there was a reduction in the number of volunteer papers for this year's program, but we believe those to be presented will provide much of interest. With the approval of the local committee of arrangements, we are to have the annual banquet and entertainment on Tuesday rather than Wednesday evening, and it is hoped this may be the means of interesting more members in the social features of the Society.

J. EDWIN WOOD, JR.,
H. S. DANIEL,
WYNDHAM B. BLANTON,
Chairman.

Scientific Exhibits

It is with deep regret we have to report the number of exhibitors for our coming meeting as very small. This was anticipated because of war conditions, as many members who formerly exhibited are either in Service or are expecting to be called soon. The medical colleges and hospitals who usually favor us with Scientific

Exhibits have had their staffs so depleted that they were unable to spend time getting up exhibits.

At this time we are not giving names of exhibitors or titles of Scientific Exhibits but shall publish them on the program. In the meantime we shall make every effort to secure more exhibits.

We appreciate the new financial allotment for the Scientific Exhibit Committee and hope you will still allow us the same amount for the coming year, as any funds not used of course revert to the Society.

W. W. S. BUTLER,
GEORGE DUNCAN,
W. AMBROSE MCGEE,
Chairman.

Department of Clinical and Medical Education

Two postgraduate clinics were held during the year, one in the fall at the University of Virginia and the other during the spring at the Medical College of Virginia. The clinic at the University of Virginia was devoted to a symposium on Gastro-Enterology. Fifty-seven doctors from Virginia, North Carolina and the District of Columbia attended this program.

The clinic at the Medical College of Virginia was held in connection with the annual Stuart McGuire Lectures on May 7 and 8 and dealt with Nutrition and Nutritional Deficiencies. Dr. John B. Youmans of Vanderbilt University Medical School delivered two lectures on the program. Twenty-six visiting doctors were in attendance.

In cooperation with the Committee on Industrial Health, the Department arranged for speakers to appear on the following programs conducted by regional and component societies:

Clinch Valley Medical Society, Stonega, May 2.

Northern Neck Medical Society, Warsaw, May 28.

Fourth District and Southside Virginia Medical Society, Petersburg, June 16.

Tazewell County Medical Society, Tazewell, July 9.

Rockingham County Medical Society, Harrisonburg, August 10.

As in the past, Prenatal and Postnatal record cards have been furnished to a number of Virginia doctors.

Following a suggestion made at the February meeting of the Department of Clinical and Medical Education, reviews of recent medical pamphlets were printed in the June and July issues of the VIRGINIA MEDICAL MONTHLY.

Due to pressure of war conditions the summer short course and the semi-annual spring postgraduate clinic were not held at the University of Virginia Medical School as usual. War conditions will doubtless make it much more difficult, even impossible, for the two medical schools to continue the postgraduate clinics for the duration. Similarly, they will make it more difficult for component societies to sponsor locally postgraduate clinics and lectures. In spite of the hardships created by the war effort, the Department will continue to keep alive the idea of continuing medical education and to assist the two medical schools and local societies in every way possible in the continuing of postgraduate activities.

Dr. J. W. Preston has been appointed Chairman of the Department of Clinical and Medical Education to succeed Dr. W. B. Martin who has been called to military duty.

As will be observed from the financial statement of the Department that follows, the expenditures for the year were $372.69. This deducted from the appropriation of $1,200, plus $4.99 refunded in stamps, leaves a balance at the end of the fiscal year of $832.30.

Although it is difficult to predict the scope of the activities of the Department for the next fiscal year, it is recommended that the Society appropriate the usual sum of $1,200 for the work of the Department.

GEORGE B. ZEHMER,
Executive Secretary.

FINANCIAL STATEMENT
DEPARTMENT OF CLINICAL AND MEDICAL EDUCATION
RECEIPTS AND DISBURSEMENTS
October 3, 1941—August 1, 1942

1941—RECEIPTS	
October 2—Refund in Stamps, Extension Division	$ 4.99
October 3—Medical Society of Virginia	86.55
November 27—Medical Society of Virginia	*600.00
	$691.54
1941—DISBURSEMENTS	
October 7—J. A. Rorer—Travel to Virginia Beach Meeting of Medical Society of Virginia	20.95
November 24—Dr. P. P. Vinson—Travel	5.00
December 1—Dr. Julian Ruffin—Travel, Honorarium	20.00
December 1—Dr. Chester M. Jones—Travel, Honorarium	51.09
December 1—Dr. T. M. Mackie—Travel	32.50
December 1—Dr. W. O. Abbott—Travel, Honorarium	16.65
1942	
February 24—Mr. G. B. Zehmer—Travel	1.15
February 28—Dr. W. B. Martin—Travel	10.00
March 4—Dr. J. W. Preston—Travel	6.35
May 12—Associated Postgraduate Committee Membership fee	50.00
May 12—Clinch Valley Medical Society—Speakers Expenses	40.00
June 20—Dr. Fred J. Wampler—Travel	5.50
June 26—University of Virignia Press—Printing	24.00
July 2—University of Virginia Extension Division Secretarial Services	75.00
July 20—Postmaster, Charlottesville, Va.—Stamps	14.50
	$372.69
August 1—Balance on hand to be returned to Medical Society of Virginia	232.30
August 1—Balance to be retained for Negro Medical Education	86.55
	$691.54

*Only $600 of the $1,200 appropriated to the Department for the year was actually requisitioned.

Legislation

Three particular activities engaged the attention of the Committee on Legislation during the past year, these being as follows: (1) aiding the Commonwealth and the Board of Medical Examiners in the prosecution of unlawful practice of medicine, (2) supporting legislation intended to strengthen the Medical Practice Act and opposing the enactment of bills which would tend to lower medical standards, and (3) formulating and raising funds to support a program of legislation for the General Assembly at its 1944 session. These will be taken up in order.

Prosecution of Unlicensed Practice

In September, 1941, after the Supreme Court had remanded the case of *Commonwealth* v. *Charles S. Grosso* for a new trial, a second trial was had in the Corporation Court of Staunton, and again the defendant was found guilty and sentenced to pay a fine of $100.00. A petition for a writ of error was filed, the writ granted by the Supreme Court, and in June, 1942, the case was argued at Wytheville and submitted, and a decision should be handed down at the September term. At the request of this Committee the Attorney for the Society filed a brief in the Supreme Court in opposition to the granting of the writ of error, and a further brief on the merits when the case was heard in that court.

In the case of *Commonwealth* v. *Charles W. Miller,* heard in the Circuit Court of Roanoke County on appeal from a conviction in the Trial Justice Court, the defendant, a chiropractor and naturopath of Salem, Virginia, was charged with practicing medicine without a license. The unlicensed practice was admitted by the defendant in a written stipulation, and the only defense advanced was that the Medical Practice Act does not contain express language forbidding the practice of medicine without a certificate from the Examining Board, and that such language cannot be supplied by implication or interpretation. The Examining Board employed local counsel to assist the Attorney for the Commonwealth in the case, and with the consent of the court and of the Commonwealth the brief on the legal question raised by the defendant was prepared and filed by counsel for the Medical Society. On September 16, 1941, the court held the statute valid and effective and imposed a fine of $100.00 upon the defendant. While the conviction was very gratifying to the Committee, this proved to be only the beginning of the fight. The organization of so-called naturopaths determined to make this a test case, and in due time a petition for a writ of error was filed with the Supreme Court and the writ granted. The case was heard at the June term at Wytheville, and a decision should be announced at the opening of the September term of that court. A brief in opposition to the granting of the writ was filed by our attorney, and a more extensive brief was prepared and filed with the court when the case was heard on the merits. The decision in this case will determine whether or not there will be any further control over the practice of medicine in Virginia without legislative aid, and for this reason the action of the court will be of major importance, not only to the medical profession but to the general public as well. Counsel for the Society is very hopeful that the Court of Appeals will affirm the decision of the trial court in this case and in that of *Commonwealth* v. *Grosso* as well.

In January, 1941, Robert M. Taggert was convicted of unlicensed practice in Fauquier County, paid a fine of $150.00 and left the county for Tennessee. It has just come to the attention of this Committee that he has returned to Fauquier and is again at work. This is another example of the difficulty of preventing illegal practice by criminal statutes alone, and illustrates the need for the statutory right to use the injunctive process in the regulation of the practice of the healing arts. Other cases of unlicensed practice have been brought to the attention of the Committee, but it has seemed best to await the decision of the Supreme Court in the Miller case before urging additional prosecutions.

Legislation

Prior to the opening of the 1942 session of the General Assembly this Committee determined to concentrate its efforts towards having the General Assembly pass two bills, one authorizing the use of injunctions to restrain unlicensed practice, and the other inserting in the Medical Practice Act express language forbidding the practice of medicine without a license from the Examining Board. The former seemed necessary because of the lack of success had in controlling unlicensed practice through the criminal provisions of the Act, and the latter had become important because of the attack on the validity of the statutes in the case of *Miller* v. *Commonwealth* referred to above. The necessary bills for presentation to the General Assembly were prepared by counsel for the Society and were introduced in the House of Delegates by Mr. L. Preston Collins of Smyth County who made a splendid although losing fight for their enactment into law.

The bill authorizing the use of injunctions was lost in the Committee on General Laws of the House, but the bill inserting in the Act express language forbidding the practice of medicine without a license was reported out by the General Laws Committee and, after a good deal of opposition, was passed in the House of Delegates by a vote of 59 to 30. In the Senate Committee on General Laws, after a hearing at which chiropractors and naturopaths appeared in great numbers and made a strong fight against the bill, it was finally passed by indefinitely, only one Senator voting against this action. Through the efforts of the Committee on Legislation a further hearing was had, after which the Senate Committee voted 6 to 5 to report the bill favorably. However, the Senate has an unwritten law that no bill which has been passed by can be reported favorably thereafter without the consent of the Chairman of the Committee, and such Chairman, Senator H. B. Moseley of Brunswick, refused to give his consent and the bill never reached the floor of the Senate.

In its fight for this legislation your Committee met very strong and organized opposition from the unlicensed naturopaths and chiropractors, both groups being repre-

sented by paid legislative counsel and having many members of their associations present at every public hearing. They took the position that there is no possible way for them to meet the requirements of the present Medical Practice Act, regardless of their ability, and on this ground they won a great deal of sympathy in the General Assembly. A chiropractic bill which would have opened the doors to legalized practice to every member of this cult then practicing in Virginia was introduced in the House of Delegates by Messrs. Calhoun of Grayson, Warren of Bristol and Boschen of Richmond. This bill was killed in the General Laws Committee of the House.

The General Assembly adopted a joint resolution creating a Commission of seven members to make a study and report on a comprehensive plan for examining and licensing all persons seeking to practice any branch of the healing art in this State and on effective means of preventing unqualified persons from practicing any branch of medicine. This Commission will make its report at the 1944 session of the General Assembly. Senator Bustard of Danville, and Messrs. Campbell of Wythe, Scott of Roanoke and Boatwright of Buckingham, have already been appointed to the Commission, and your Committee is doing all it can to have capable and representative men appointed to fill the remaining positions. After this Commission is created and has organized, the Society should co-operate with it in every possible way in making its study a thorough and comprehensive one and its report a fair basis for further legislation. We recommend that a special committee from the Society be appointed for this purpose, or that the matter be left to this Committee for attention.

Your Committee, through its counsel, prepared a Senate joint resolution, directing the Virginia Advisory Legislative Council to make a thorough investigation and study of the duties now imposed upon coroners, and to report on the advisability of abolishing the office of coroner and transferring to persons trained in pathology and toxicology all questions with respect to the scientific determination of the causes of death under suspicious circumstances, and to regularly constituted law enforcement officers all matters relating to the enforcement of the criminal statutes. This resolution was sponsored by Dr. W. C. Caudill, member of the Senate from the 19th Senatorial District, and was agreed to by both branches of the General Assembly. A special committee from the Society should be appointed to co-operate with the Legislative Council in this study.

As directed by the House of Delegates and the Council, your Committee conferred with Representatives of the State Bar and also the State Health Commissioner relative to legislation clarifying the medical treatment of prisoners confined to jails. This was also discussed with Representatives of the General Assembly, individually and collectively. From these discussions we concluded that it was an inopportune time to attempt to introduce this legislation, and this should be carried over at least until the next meeting of the General Assembly.

The defeat of certain bills sponsored by the Society was due entirely to the activities of two strongly organized and highly vocal groups which brought great pressure to bear on the members of the General Assembly, both through personal contact and petitions from constituents. Our Committee feels that if the medical profession had been half as active during this session of the General Assembly as these groups its proposed legislation would have been enacted by a very substantial majority. We strongly urge that immediate steps be taken to effect an organization through which a clear picture of issues involved may be presented. We cannot too strongly emphasize the fact that the next two years may be of vital significance to the future regulation of the practice of the healing art in our State.

A Legislative Program for 1944

The Study and report to be made to the General Assembly of 1944 by the Legislative Commission referred to above makes it highly important that everything possible be done by our Society in assisting the Commission in its investigation, and in supporting in the General Assembly all legislation recommended by it which would be in the interest of high medical standards and the health and general welfare of the citizens of our State. Much critical material bearing on the practice of the healing arts must be assembled and made available to the Commission in its study, and the success or failure in other states of various plans for the regulation of practice must be presented for its consideration. Briefly, we should place our Society and its committees at the service of the Commission, and co-operate with it in working out this problem which is so vital to all. If the Commission should recommend that a Basic Science Board be established to examine all who would practice medicine in any of its branches, then the composition of that Board and the regulations under which it would operate are matters which would concern us deeply. The General Assembly is determined to put an end to the bi-ennial contest between the regular medical practitioners and the cults as to who shall be permitted to enter the field of licensed practice, and a duty rests upon us to see that in ending that controversy nothing is done which will impair the high quality of medical service to which the public is entitled and which it has come to expect at our hands.

Your Committee recommends that every effort be made during the next eighteen months to closely organize and integrate our membership so that its influence may be thrown behind any plan for preserving and strengthening the requirements for admission to the practice of medicine in Virginia. The growth and development of scientific medicine has been phenomenal in the war years, and to keep up with its progress is a heavy burden on even the best trained and most competent men of our profession. To open the field at this critical time to the incompetent and untrained would endanger the public health for many years to come. This must be avoided at all costs.

Your Committee has kept in close touch with certain

proposed medical legislation in the Federal Congress which would seem not to be in the public interest. Many letters have been written to interested physicians and to members of the Congress, and our efforts will be continued as long as they may be needed. In all its work this Committee has had the invaluable assistance of the Bureau of Legal Medicine and Legislation of the American Medical Association. We are very grateful to Mr. Holloway, the Director of the Bureau, for his interest and help in our local problems.

Respectfully submitted,

ALEX. F. ROBERTSON, JR..
W. D. KENDIG,
C. M. CARAVATI,
C. C. SMITH,
J. MORRISON HUTCHESON,
C. D. NOFSINGER,
B. F. ECKLES,
J. B. MCKEE,
DEAN B. COLE,
Chairman.

Membership Committee

This Committee has had no application for membership referred to it during the past year, all new members having joined through component societies. The MONTHLY has carried notices of the deaths of all members, so far as they could be obtained, and their names will be read at the annual meeting.

We take pleasure in recommending for honorary membership the name of Dr. Roshier W. Miller, our retiring president.

D. M. KIPPS,
G. F. SIMPSON,
J. BOLLING JONES,
Chairman.

Ethics Committee

The Ethics Committee has no report as no matter has been referred for its attention.

R. L. RAIFORD,
T. K. MCKEE,
I. C. HARRISON,
Chairman.

Judicial Committee

The Judicial Committee has no amendments nor substitutes to offer for any existing articles, or sections, of the Constitution or By-Laws.

At a special meeting held in Richmond May 19th, the Council passed a resolution, or substitute, for Article VIII, Section 7, of the By-Laws dividing the State into the same number of councilor districts as the congressional districts, and composed of the same counties. The Judicial Committee in studying Sections 7 and 8, of Article 8 of the By-Laws, before presenting them at the meeting at Virginia Beach, used the following reasoning, or preamble that, whereas "The purposes of the Society (Article II of the Constitution) are to promote the science and art of medicine, the protection of public health, and the betterment of the medical profession," therefore, we think this Society should not be bound to conform to the division of the State by political parties in defining our lines of councilor representation.

We, therefore, recommended that the State be divided into ten councilor districts. We went on further (Section 8) to state what part each councilor district was supposed to play; also the duties of each councilor—all in an effort to bring the individual physician in closer contact with the Society and its needs.

There should be no confusion on the question of the appointment of the Medical Examining Board—the examiners being recommended to the Governor by the House of Delegates.

The State Board of Health is appointed by the Governor; and the divisions of the State from which he appoints them is geographical, and not in accordance with any congressional division.

The hope in the 1941 amendment, as passed at Virginia Beach, was that some earnest, painstaking committee—not hurriedly—could work out a division which would better meet the real needs of the Society.

P. W. BOYD,
D. S. DANIEL,
P. ST. L. MONCUBE,
Chairman.

Advisory to the Woman's Auxiliary

The Chairman of the Advisory Committee to the Woman's Auxiliary to the Medical Society of Virginia attended a Post-Convention Board meeting of this group at Virginia Beach, October 7, 1941. Mrs. E. Latane Flanagan, President, presided. Mrs. R. E. Mosiman, President of the Auxiliary to the American Medical Association, and Dr. R. W. Miller, President of the Medical Society of Virginia, were also present.

The officers and chairmen of standing committees for the year 1941-1942 presented their aims and objectives which were discussed and approved. The Chairman also spoke at the Mid-Winter Board meeting of the Auxiliary, his subject being "Pending Legislation". Objectives approved other than those discussed at Board meetings are:

The Auxiliary's participation in the 1942 legislative program on health measures;

The Auxiliary's cooperation in the observance of Flag Day, June 14th;

The President, representing the Auxiliary, to accept membership on the Executive Committee of the Virginia Cancer Foundation;

The local auxiliaries to help Miss Josephine McLeod, R.N., Secretary-Treasurer of the Virginia Board of Examiners of Nurses, to recruit girls to study nursing;

The President to represent the auxiliary as a member of the Sponsoring Committee of the U.S.O.

The President also to represent the Auxiliary on the Virginia War Savings Staff.

Respectfully submitted,

HAWES CAMPBELL,
H. W. ROGERS,
JOHN POWELL WILLIAMS,
Chairman.

Child Welfare Committee

Like all other civilian activities Child Welfare work in Virginia has suffered by reason of the war. Loss to the armed forces of trained workers, physicians, nurses and clerical helpers has greatly depleted the ranks of those in health and child welfare work.

Nevertheless, by reason of a volume of constructive legislation by the 1942 session of the General Assembly, in some respects the most noteworthy in a generation, the outlook for improvement in child care, mental hygiene and general health of the people of Virginia is better than it has been in the entire history of the State. This happy situation was brought about largely by intensive study on the part of the Legislature following the creation of the Virginia Legislative Advisory Council and by the sound advice of the present and past executives of Virginia. Among other bills the Legislature passed an enabling act providing for the creation of additional full-time health units for the counties, not now enjoying the services of such units. This was the outstanding health legislation of the session. It will enable the counties of the State to establish local health units and clinics to serve almost all the health needs of those requiring such services but who are unable to pay for them. These will include medical, dental, prenatal, maternal, pre-school, tuberculosis and others as facilities can be provided from the State's funds.

The legislature revised its program for mental hygiene by placing this most important phase of public health work under the State Hospital Board and creating a Department of Mental Hygiene and Hospitals. The duties and powers of this department are such as to permit a long range program which should place Virginia in the forefront of the battle for the preservation of mental health. Incidentally, because of this program, the aggregate cost to the State for the care of the mentally ill should be greatly reduced within a decade or two.

The Legislature also passed an amendment to the Public Welfare Act of 1922, which authorized the establishment of city and county Departments of Public Welfare. These departments have the right to place in institutions or homes such persons under eighteen years of age as may be intrusted to their care, subject, of course, to the approval of the Commissioner of Public Welfare. This will enable juvenile courts to commit children directly to the local welfare departments. Satisfactory follow-up care has been provided. Licensing and inspection of foster homes is also provided. This program is to be launched gradually as funds and personnel become available. Thus, in addition to the Children's Bureau of the State Department of Public Welfare, the Aid to Dependent Children provision of the Public Assistance Act and the private institutions of the State, Virginia will soon be in a position to give substantial aid to most of its dependent children.

A black spot still remains on our plan for the care of mentally defective children. This is the inadequacy of housing and other facilities at the Lynchburg and Petersburg colonies.

Another important act of the Legislature was the transfer of the two industrial school boards to the Department of Public Welfare. This affects the Virginia Home and Industrial School for Girls, the Virginia Industrial School for Boys, the Virginia Industrial School for Colored Girls and the Manual Labor School for Colored Boys. Here, likewise, funds for expansion are greatly needed.

Handicapped Children

It is estimated that there are in Virginia about 18,000 children handicapped in one way or another. Many of these are in need of public assistance. Some are unable to get to school and are referred to as the "home bound". About one hundred and fifty are now being instructed by visiting teachers. This number could easily be doubled. $50,000 is available for this program, but this is quite inadequate and should be increased greatly.

Visual Disturbances

The Commission for the Blind received an additional $6,000 at the hands of the Legislature. Another psychiatrist and two trained nurses are needed, but at the present time it is difficult to secure them.

Speech Defects

There are six speech correction teachers in the State. These are aided by regular teachers. More are badly needed.

The Deaf

Several audiometers are being operated in the State, that minor degrees of deafness in school children may be detected. These should be multiplied several times.

Crippled Children

There are now about 220 beds for orthopedic cases. About 60 are for colored children. More are required, especially for colored children.

Tuberculosis

$200,000 has been set aside for Piedmont Sanatorium. Among other things this provides 20 to 30 beds for colored children. There are about 40 beds for white children. Deaths from tuberculosis increased last year from 1,560 in 1940 to 1,638 in 1941. The number of deaths under fourteen years in 1940 were 89 and in 1941, 94. The death rate in the State in 1941 was 59.3 as compared with a rate of 58.1 in 1940, the increase occurring in the colored population.

Maternal and Child Health

Transportation is fast becoming a problem in the attendance on clinics held by the Maternal and Child Health Bureau. However, the Bureau as usual has done a good job in the care of mothers and babies and in its prenatal services. There is a great need for expansion of hospital facilities for the care of mothers at term. The Maternity Hospital law has greatly improved facilities for the care of the new born.

More stations for the care of prematures are being set up and more will be provided as funds are available. More mothers are receiving anti-syphilitic treatment and fewer babies are syphilitic.

Examinations of pre-school children are increasing steadily as will be seen from the accompanying table.

	Year ended June 30, 1940	Year ended June 30, 1941	Year ended June 30, 1942
Number of Well-Baby Clinics	31	43	48
Total number of well-baby clinic visits	17,038	22,281	25,687
Total number of Pre-school clinic visits	13,085	22,862	24,719
Total number Infant and Pre-school clinic visits	30,123	45,143	50,406

Follow-up of these examinations results in the correction of many physical defects which might otherwise pass unnoticed.

It is gratifying to the committee to learn that many of the examinations were done by private physicians.

The following table was secured from the files of the State Department of Health.

	Infant Death Rates Per 1,000 Live Births			Total Number of Births
		Virginia		
Year	U.S.	White	Negro	Total	in Virginia
1936	57.1	62.7	101.5	73.9	51,117
1937	54.4	59.3	95.4	69.8	51,791
1938	51.0	56.7	89.9	66.1	53,380
1939	48.0	51.7	83.8	60.8	52,785
1940	47.0	51.0	80.2	52.2	55,085
1941	*	56.3	95.2	66.8	58,530

The increase in the infant mortality rate for 1941 occurred as a result of the increase in the number of deaths in the defense areas and was mainly due to diarrheal diseases.

From Virginia State Department of Health
April 28, 1942

Diseases	Total Cases 1941	Cases Under 14 Years	Total Deaths 1941	Deaths Under 14 Years
Pneumonia	4,199	1,299	1,618	687
Whooping Cough	4,327	1,523	196	196
Measles	35,600	7,408	167	134
Scarlet Fever	1,715	1,281	10	9
Poliomyelitis	155	129	13	9
Diphtheria	754	588	44	41
Tuberculosis (Pulmonary)	2,704	279	1,495	46
Tuberculosis (All forms)	10,712	Not Available	1,638	94
Infantile diarrhea and dysentery (under 2 years)	307†		575	

Pneumonia, diarrhea, whooping cough and measles still stand high as causes of death among infants and children, but it is believed that deaths from diarrhea will diminish as living conditions among war workers are improved.

Increased employment of pertussis vaccine should largely eliminate death from whooping cough, and pneumonia deaths will most likely diminish with the use of the sulfonamides.

At least two additional nutritionists are needed by the State Health Department, and at least one full-time pediatrist should be employed.

A nutrition consultant to be employed for educational purposes, instructing the Health Department staff including the field workers, to lecture to teachers and Parent-Teacher Groups and other civic groups, could contribute greatly to the knowledge of the food needs of the populace generally.

Finally, your committee would call the attention of the Medical Society of Virginia to the fact that so far as it (the committee) is informed no action has been taken toward securing legislation requiring that sectarian and non-sectarian schools be subject to inspection by the State Department of Health without the necessity for complaint by others or request by such institutions.

It also urges that action be taken on its recommendation, adopted at a previous meeting of the Society, that all teachers in grade schools of Virginia present, before the fall school sessions begin, satisfactory evidence that chest x-ray plates of the applicants indicate apparent freedom from active tuberculosis.

Respectfully submitted,

C. W. Purcell,
C. E. Conrad,
Leta J. White,
J. M. Bishop,
E. A. Harper,
J. N. Williams,
L. T. Royster,
R. D. Bates,
F. D. Wilson,
Chairman.

Maternal Health

In 1941 more babies were born in Virginia than ever before, and fewer mothers died, giving us an all-time low maternal death rate of 3.9. The figures for the past three years are shown in Table I. Table II shows the maternal deaths from the three major causes of puerperal death. Your committee is especially pleased that deaths from the toxemias of pregnancy have so markedly declined that this category no longer heads the list. We feel that this is concrete evidence of the good work of the prenatal clinics. These clinics now number 106. The

Table I

Number of Maternal Deaths

Year	Total No. Births	White	Colored	Total	Maternal Death Rate
1939	52,785	146	125	271	5.1
1940	55,085	133	113	246	4.5
1941	58,530	124	105	229	3.9

*Not yet available.

†Eighty per cent diarrhea and dysentery cases not reported by age explains apparent discrepancy in cases and deaths.

steady growth in their number and in their work is shown in Table III. The fifty-two deaths from toxemia of pregnancy were *not* recruited from the seven thousand seven hundred odd women who attended these clinics. The deaths from puerperal toxemia for the past ten years are shown graphically in Figure I. Those from puerperal sepsis are shown in Figure II. The downward trend of this chart is also gratifying.

TABLE II

NUMBER OF MATERNAL DEATHS FROM MAJOR CAUSES
1941

	WHITE	NEGRO	TOTAL
Toxemia	26	26	52
Infection (Septicemia including Septic Abortion)	49	34	83
Hemorrhage	22	19	41
	97	79	176

(Figures obtained are for calendar years, as obtained from Bureau of Vital Statistics.)

As a natural outgrowth of reviewing the cases of maternal deaths, your committee has undertaken the publication each month in the VIRGINIA MEDICAL MONTHLY of one or more cases illustrative of common errors that have occurred. This is entirely impersonal as no member of the committees knows either the attendant or the hospital involved. Dr. T. J. Williams has undertaken to edit the case reports and the other members of the committee are proud of the way he has done the job. The State

TABLE III

	YEAR ENDED		
	June 30 1942	June 30 1941	June 30 1940
Number of Prenatal Clinics	106	99	84
Number of New Prenatals Registered	7,743	7,608	6,261
Number of Prenatal Clinic Visits	33,408	32,233	26,919
Number of Postnatal Clinic Visits	4,397	4,434	3,598
Total number of physicians serving as clinicians	335	280	250

Board of Health has sent reprints of the case reports to those Virginia doctors who are not subscribers to the JOURNAL, and has received many favorable comments and requests for more.

In our report for last year is the following statement: "In reviewing the details of the maternal deaths, one gets the impression that the complicated case is not sent to the hospital early enough. Ideally, these patients should be hospitalized at the first intimation of danger and not when they are in extremis, and, as the work of the clinics increases, it is hoped that this ideal may be approached more closely." Last year in Brunswick County funds were made available for this very purpose. At the last meeting of the Maternal Health Committee a resolution was unanimously passed endorsing this work and expressing the hope that the State Board of Health find more funds for the further extension of such work.

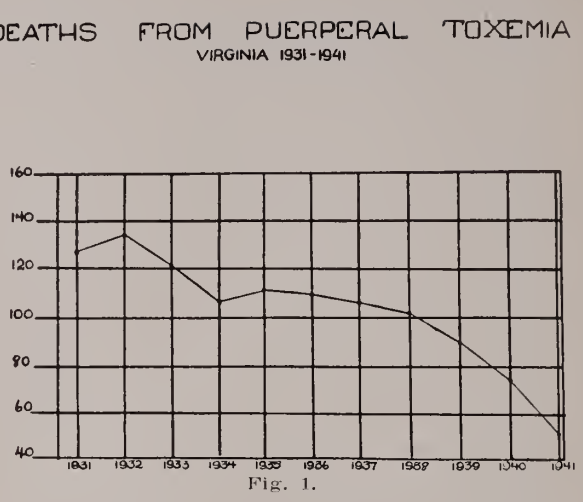

Fig. 1.

Your committee at its last meeting also adopted the following resolution which it hopes will meet with the approval of the House of Delegates:

WHEREAS:

The Maternal Health Committee of the Medical Society of Virginia has been given the responsibility of investigating and recommending action to the Society on matters pertaining to maternal health,

THEREFORE, BE IT RESOLVED:

1. That the Medical Society of Virginia encourage private practitioners to accept the responsibility for giving information relating to the prevention of pregnancy to those patients for whom the physician believes contraceptive procedures to be indicated for medical reasons.

2. That indigent prenatal patients who attend maternal and child health clinics, operated under the direction of the State Health Department, be encouraged to return to these clinics for postnatal care and that they be given birth control information and advice as a part of the clinic routine, if such information and advice is thought by the clinician in charge to be indicated for medical reasons.

3. That procedures for contraceptive advice be made available to patients in the State operated sanatoria for treatment of tuberculous patients if, and when, satisfactory arrangements can be made by the State Heatlh Commissioner.

4. That interested lay persons be encouraged to supply, upon request by local physicians, material for carrying out contraceptive procedures for those patients not able to secure such material otherwise.

In conclusion, your committee wishes to emphasize that its justifiable pride in the present excellent condition of maternal health in Virginia is tempered by the thought that it will be extremely difficult to keep up this good showing. With the shifting of the population and its concentration in centers of war work, living conditions are often unsatisfactory and it is going to be increasingly difficult to maintain good prenatal and delivery care. To make matters worse great numbers of doctors have joined the armed forces, so that the load upon civilian doctors must certainly increase. The thought has been expressed that, in view of the gasoline and rubber shortage, the activities of the prenatal clinics should be curtailed and that some of them even should be discontinued. Such an argument is specious. In this total war in which we are engaged, the health of our mothers is more

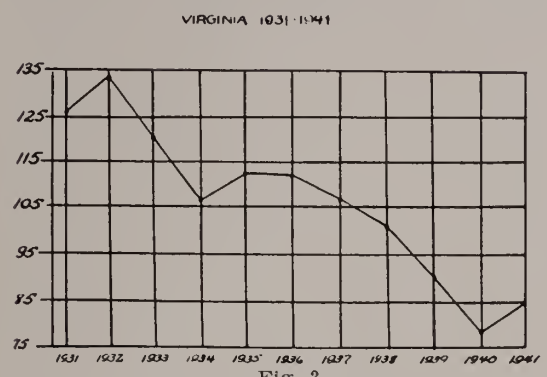

Fig. 2.

important than ever. Every effort should be made to extend the usefulness of the prenatal clinic so that the complicated case can be recognized early and arrangements made to take care of it. The shortage of doctors is an added reason for reducing emergency obstetrics to the minimum.

The Committee requests that the same appropriation for postage and incidentals be made for next year.

C. J. ANDREWS,
A. M. GROSECLOSE,
E. B. KILBY,
WALTER MCMANN,
J. A. OWEN,
T. J. WILLIAMS,
M. P. RUCKER,
Chairman.

Walter Reed Commission

Your Committee has been looking after the upkeep of Belroi, birthplace of Walter Reed, and wishes to report it in good condition. There have been a number of visitors to this shrine recently.

It is recommended that the fire insurance be continued, and, in addition, that an appropriation of $60.00, or as much thereof as needed, be allowed for repairs and keeping up the house and grounds.

J. D. CLEMENTS,
J. W. SMITH,
CLARENCE PORTER JONES,
Chairman.

Report of Committee on Medical Program of Virginia Conference of Social Work

The Virginia State Conference of Social Workers held its annual meeting in the Hotel Jefferson, Richmond, April 24-25, 1942. Approximately 700 members registered for the meeting. The program for the Medical and Health Section was arranged and the meetings were conducted by the chairman of this committee of the Medical Society of Virginia.

The Friday morning session opened with a paper by Dr. M. P. Rucker of Richmond, whose subject was "Maternal Mortality in Virginia"; followed by Mr. Louis Reed of the U. S. Public Health Service on "Medical Care for the Needy in Virginia". This paper was a report on his excellent survey relative to the medical service available to the people residing in rural areas of the State. The afternoon session on Friday opened with a paper by Dr. E. T. Trice of Richmond whose subject was "Rejections Under the Selective Service in Virginia". This was followed by the paper, "Insuring Health in War Time," by Dr. Watson B. Miller, Asisstant to Mr. Paul McNutt of Washington, D. C.

The final session was held Saturday morning and was the high light of the Conference. The oppoisng counsel in the famous trial of the United States *versus* the American Medical Association was presented. Mr. John H. Lewin, Special Assistant to the Attorney General, presented the Government's side of the case and Mr. Seth Richardson, Counsel for the American Medical Association, gave the opposing point of view. These two distinguished lawyers did a magnificent job in rehearsing this trial for the benefit of an enthusiastic audience of approximately 500 people in which the medical profession was all too poorly represented. A heated discussion followed the formal presentations of the two lawyers and it was quite obvious that the great majority of the audience was on the side of the U. S. Government in its sponsorship of socialized medicine as represented by Group Health, Inc. of Washington.

The chairman of your Committee would like to point out the fact that the overwhelming sympathy of this rather large audience was very definitely opposed to the American Medical Association on this issue. Since the audience numbered about 500 persons and included only seven physicians, despite the fact that every member of the profession in Richmond was invited to attend, it would seem that the layman was alert to the problem and it would be well if physicians likewise became more aware of the increasing public interest in and the enthusiasm for state control of medicine.

Respectfully submitted,
WILLIAM BICKERS.

Pneumonia Commission

The following report of the Pneumonia Control Program in Virginia has been prepared by Dr. H. H. Henderson, State Epidemiologist, and meets with the approval of the Pneumonia Commission of the Medical Society of Virginia.

In the early part of June, the month before the close of the fiscal year, a careful study of the pneumonia program was made with two ideas in mind, (1) to see what had been accomplished by the pneumonia program and (2) to formulate a program for the coming year that would be reasonable and practicable under present conditions as well as efficient from the point of view of studying and controlling pneumonia.

The pneumonia control program was organized in October 1940. Thirty-nine laboratories, including the State Laboratory in Richmond and its branches in Norton and Luray, were selected so that one was within 25 miles of every physician in the State and authorized to do typing, blood work, urinalysis and sulfapyridine determinations on indigent patients. When the physician's request card

and the report of the laboratory work had been sent in, the laboratory was reimbursed up to $10.00 per patient. Excluding the work done by the Medical College of Virginia, which is a consultant for the program and under contract to do all work sent to them, $1,184.50 was paid out to these laboratories in a period of eight months, October 1, 1940 and June 30, 1941. This paid for laboratory work on 209 indigent patients at an average cost of $5.67 per person. In the next ten months, that is, between July 1, 1941 and April 30, 1942, only $515.00 was paid to these same laboratories for work on 94 indigent patients. Analysis of the work revealed that these figures represented an approximately equal decrease in each laboratory test rather than an excessive decrease in any particular one. If those who were only given the drug are added to these figures, 381 were cared for during the first period and 144 in the second. The total figures for the Medical College of Virginia show the same decrease, 179 patients the first period and 94 the second.

On first thought this apparent decrease in interest in controlling pneumonia was very disheartening to those whose efforts had been spent in promoting and sponsoring the program. Then it was realized that the fault was not a deficiency in the program but the rather sudden and widespread use of the sulfa derivatives in treating pneumonia. Inquiry in nine other states having considerably older pneumonia control programs disclosed the fact that all but one were having the same experience, and that one made no comment one way or the other. Also, on the encouraging side of the ledger was the fact that for the calendar year of 1941 the death rate from pneumonia was the lowest in the history of Virginia.

Rather than run the risk of the pneumonia death rate rising because the pneumonia control program drifted into quiescence it was agreed that the program should be adapted to the latest methods of treatment and our efforts concentrated on building up a well-trained highly efficient organization with two ends in view, (1) to reduce the death rate by making the best treatment available to everyone, and (2) to learn more about treating pneumonia from experience in Virginia.

It is generally agreed that the ideal treatment of pneumonia is to type the patient at the onset of the disease and then, unless considered seriously ill, give one of the sulfa drugs. If the patient shows no definite improvement within 24 to 48 hours, it is recommended that the drug be discontinued and serum treatment instituted. In other cases it will be necessary to resort to serum because of toxic reactions from the drug. Since the administration of the sulfa drugs interferes with successful typing, the typing must be done first to be prepared in case serum has to be used. However, since such cases are comparatively rare, more often than not the drugs will be given immediately and no typing done. On the other hand, if the patient is seriously ill from the onset, chemotherapy should be combined with adequate type specific anti-pneumococcal serum therapy.

Since adequate treatment requires typing, laboratory work, and in some instances serum treatment, in addition to the drugs, all these services must be kept available to the physicians in the State. However, since 18 of the 39 laboratories made no report of any sort last year and 7 others did no laboratory work, it seems inadvisable to continue to equip and stock so many laboratories. It has been suggested that it would be more practical, more efficient and incidentally more economical to select perhaps 10 laboratories distributed throughout the State and keep closer supervision and check on them than we have been able to do in the past. If the services of a well-trained experienced technician, a complete stock of drugs and sera, and prompt reporting of findings by phone were available to the physicians, interest in pneumonia control could be stimulated to a far greater degree than in the past it is believed. In some measure, at least. the lack of support for the program has been because the efforts were spread so thin that no real enthusiasm was aroused.

This brings us to the second point in the revised plan, which is to circularize the physicians, presenting the purpose and goal of such a pneumonia control program and advising them of the services available.

In conjunction with such a program better and more complete reporting should be requested and encouraged so that a study could be made of the value and effect of different treatments under varying circumstances. This informative side of the program is important to keep it from becoming a static or outmoded one. In line with the study program is the suggestion that certain counties where pneumonia is particularly prevalent be selected and used as experimental counties where the drugs would be distributed to all the physicians.

Another recommendation to vitalize the pneumonia control program is the establishment of clinics for immunization against whooping cough since pneumonia is so frequently a complicating factor causing death in whooping cough cases in small children.

It is obvious that this discussion leaves many details to be worked out but the essential outlines of a pneumonia control program for the coming year are apparent. (1) Establish approximately 10 well equipped, closely supervised pneumonia typing stations. (2) Educate both the lay people and physicians to demand and avail themselves of these services (3) Study case reports to evaluate the program. (4) Select certain communities for intensive and specialized study. (5) Sponsor immunization against whooping cough to prevent the pneumonia deaths often complicating whooping cough in children.

Commission { H. H. HENDERSON, P. S. SMITH, S. D. BLACKFORD, J. R. HAMILTON, ERNEST G. SCOTT, B. S. YANCEY, G. B. LAWSON, HARRY WALKER, E. L. ALEXANDER, WYNDHAM B. BLANTON, *Chairman.*

To Confer with State Board of Nurses' Examiners

There has been no formal meeting between the Committee for conferring with the Nurses' Association and the officials of that organization.

I have had the pleasure, however, of seeing the Executive Secretary, Miss Josephine McLeod, on a number of occasions, and I know from these contacts that the nurses are co-operating with the doctors and with the hospitals in every possible way.

Respectfully submitted.

W. LOWNDES PEPLE,
Chairman.

Syphilis Control

1. With the co-operation of the editor of the VIRGINIA MEDICAL MONTHLY, this Committee is sponsoring a page on Current Information on Syphilis each month. Dr. Dudley C. Smith has been selected to serve as editor for this page and it is our purpose to afford physicians in Virginia the opportunity to get our help on any syphilis problems, or to have their questions answered. Questions of general interest will be published. Please address communications to Dr. Dudley C. Smith, University of Virginia Hospital, Charlottesville, Virginia.

2. This Committee has worked with the State Health Department on several matters during the year. One was in the preparation of the following letter which was sent over Dr. Riggin's signature:

"SPECIAL COMMUNICATION

"TO: ALL PHYSICIANS IN THE STATE OF VIRGINIA

"Because of the urgent necessity for lessening the crippling and disabling venereal diseases in our armed forces and war industry workers (many thousands of both are in Virginia at present), the President of the Medical Society of Virginia and his Syphilis Control Committee have asked that the following information be given to every practicing physician.

"The State of Virginia has a law enacted in 1920 (House Bill 324, Chapter 364), to provide for the control and prevention of venereal diseases. Article 8 of this chapter reads: *'Physicians, Health Officers and all other persons are prohibited from issuing certificates of freedom from venereal diseases,* except in giving such ordinary certificates of freedom from infectious diseases as may be necessary in reports of general examinations, and certifying for the issuance of marriage license.'

"It is a well-known fact that if prostitutes, persons of ill fame, or other persons are in possession of a physician's written statement of freedom from venereal disease, such persons will use these written statements to solicit business, and thereby will actually expose more men to disease.

"It is known that the status of a person having a negative examination for venereal disease may be reversed in an hour, that a high percentage of prostitutes have venereal diesases, and that venereal disease infections in the military and other groups relate to the number of sexual exposures; therefore, it is clear that physicians can aid in lessening these diesases by refraining from issuing written statements to these individuals.

"In the interest of our fighting men and war industry workers you are requested to consider these matters, and not to issue any written statements of this kind."

D. C. SMITH,
E. E. BARKSDALE,
J. W. LOVE,
W. B. PORTER,
R. KIMBROUGH,
Chairman.

Tuberculosis Committee

The Committee met in Richmond March 30, 1942, with all of the members present.

A review of the entire tuberculosis problem in Virginia as conducted by the various agencies was made by the Committee, and even though the tuberculosis death rate showed an increase last year in both races, some very gratifying results have been accomplished. There is no claim made by this Committee for the beneficial results herein reported, but an attempt is made by us to briefly review and report them so that the State Society may be cognizant of what is going on in this field. Just as other branches of medicine have been retarded during the past year due to World War conditions, so have the various organizations and agencies working in the field of tuberculosis. Much valuable personnel—doctors, nurses and trained workers have been lost from this service due either to entering military fields or going elsewhere on account of being offered larger salaries. However, the work has, we believe as a whole, gone forward in a satisfactory manner.

TUBERCULOSIS SURVEYS IN INDUSTRIAL PLANTS:

The Tuberculosis Out-Patient Service of the State Department of Health has, since June 1941, been continuously active with the photo-fluorographic unit which takes 35 mm. films of the chest. This survey is being made on industrial employees throughout the State at the rate of 4,000 per month. (The unit has also been used for survey work at the State institutions for the mentally sick.) At present no definite figures are available, but it would appear that there will be approximately 1 per cent of the industrial workers found to have clinical tuberculosis. This survey is being carried out at a cost of 25c per patient, and all expenses have been borne by the management at the plants who have shown much interest in the program. The clinics have been organized so as to conserve and minimize the time lost from work; only about fifteen minutes being lost by each employee. A sufficient number of requests for this work have been made to keep the unit busy for the next twelve months.

The unit is equipped to do the conventional 14 x 17 films, and usually borderline cases are re-x-rayed on the larger films before a final diagnosis is made. All of this work is done with the approval of, and in conjunction with, the plant physicians.

Surely these miniature films are not as reliable as the regular films (14 x 17) and it is granted that a small number of cases will be missed, yet the results being accomplished speak for the value of the survey. There-

fore, the Committee approves the work and believes that it is an invaluable adjunct to various other tuberculous diagnostic programs that are being conducted throughout the State. We also feel that it reaches a class of people who otherwise might not have their disease discovered until the process has advanced beyond the curable stage, and perhaps the infection spread to those with whom they may live and come in contact.

DEATH RATE:

During 1941 there was an increase of 78 deaths, 4.8 per cent, (14 white and 64 colored) from tuberculosis as compared to 1940. (Figures were obtained from the Bureau of Vital Statistics as of April 21, 1942.) The greatest increase was among the negroes, and most of the increase was noted during the months of January and February, 1941. It will be recalled that we had a mild epidemic of influenza in Virginia during that time which may explain at least a part of the increased death rate.

BEDS FOR TREATMENT:

At present there are in the State approximately 1,659 beds (State 1,039 and Municipal 620) for the treatment of tuberculosis—1,198 are for white and 461 for colored patients. Based on last year's death rate there is now available for treatment the equivalent of one and two-fifths beds for whites and slightly over one-half bed for negroes per death. The last session of the General Assembly of Virginia appropriated for construction sufficient funds, available July 1, 1942, to provide 200 more beds at Piedmont Sanatorium. Were these beds available for use now, and based on last year's death rate for colored, there would be about three-fourths bed for treatment for every death.

There is also need for more infirmary type of beds for white patients. The modern treatment of tuberculosis requires facilities different from those in past years when sanatorium patients were mostly ambulatory, and we depended almost entirely on bed rest to heal the pulmonary disease. The various forms of collapse therapy today and the fact that an attempt is being made to treat more advanced cases make it necessary for a much larger proportion of the sanatorium beds to be of the hospital kind to properly care for this increase in surgical cases.

COLLAPSE THERAPY IN THE FIELD:

This service has continued to grow. The number of pneumothorax refill stations has remained about the same, but there has been an increase in the number of patients treated. It is hoped that with the increased demand for this service more physicians will qualify to administer these refills so that patients may leave the Sanatorium when suitable for it and continue their collapse therapy at home by reporting to the pneumothorax station for refills when they are due. The number of patients getting major surgery, that is, thoracoplasties, extrapleural pneumothorax, etc., has also increased steadily. The last General Assembly increased by $30,000, for the biennium the funds available for the collapse therapy program. This, we believe, was a worthy step in the right direction by the law-making body.

VIRGINIA TUBERCULOSIS ASSOCIATION DURING 1941:

The Virginia Tuberculosis Association has continued its excellent educational work on tuberculosis and a few of its many activities will be discussed. During the past year many lectures were given, moving pictures on tuberculosis were shown to large groups and this Society has lent films to organizations having projectors. In addition to this they have cooperated with the Audio-Visual Education Department of the State Board of Education in placing five tuberculosis films in each of the five leading libraries of the State Teachers Colleges, which in turn have distributed them to schools throughout the State. This seems to be an educational phase of the work which is well worth while.

Many of the local associations of this organization are supplementing the x-ray clinics of the State Department of Health with the Powers paper films and the 35 mm. films to apparently healthy groups in High Schools and school personnel, also in industrial groups.

The Virginia Tuberculosis Association also sponsored with the District of Columbia and the Maryland Tuberculosis Association a short refresher course for the negro doctors from Virginia, Maryland and the District of Columbia, the course being given at Howard University in Washington. The main subjects discussed were Tuberculosis, Obstetrics and Venereal Diseases.

Through the local units of this association school studies on tuberculosis are being made by the teachers, and they have been furnished with kits of authoritative reference material and given an outline for its use.

TUBERCULOSIS IN PREGNANT WOMEN:

Plans have finally been worked out whereby pregnant women with tuberculosis may be admitted to Blue Ridge Sanatorium, and jointly with the obstetrical staff from the University of Virginia Hospital and Sanatorium staff the cases are completely worked out, and a decision reached as to whether or not the pregnancy should be terminated or permitted to go to term. If it is decided that the case should go to term, the patient will continue in the Sanatorium until time to be delivered, then transferred to the University Hospital for delivery. After ten to fourteen days, the mother returns to the Sanatorium to continue on with her treatment, and necessary arrangements are made for the family to remove the baby from the Hospital when it is ready to leave. It is believed that this is a valuable service, and will give pregnant women with the disease an opportunity for collapse therapy, and also to go ahead to term with the pregnancy in selected cases.

ORGANIZATION OF THE CHEST SOCIETY:

At a recent meeting final arrangements were made for the organization of a Chest Society to be known as "The Society of Chest Physicians in Virginia". So far one meeting has been held in Richmond when a symposium on the various phases of pneumothorax was conducted. The meeting was largely attended by physicians throughout the State who are operating the pneumothorax refill

stations, and it is believed much valuable aid was given them at this time.

Respectfully submitted,
C. LYDON HARRELL,
EDGAR C. HARPER,
FRANK B. STAFFORD,
Chairman.

Advisory Committee to The State Department of Health

Pursuant to a resolution adopted by the House of Delegates at its last meeting, to wit:

"Report of Syphilis Control Committee:

"1. Because of the development in dealing with the problem of evaluating laboratories for sero-diagnostic tests in connection with premarital examination law, we recommend the appointment of a Committee for the Study of Clinical Laboratories in Virginia. . . ."

The Chairman of this Committee immediately communicated with Dr. I. C. Riggin, offering the help of this Committee. In due time Dr. Riggin replied that he knew of no way in which this Committee could be of service, but that if the occasion arose he would be glad to call upon them. There has been no subsequent call or communication, and hence we have no report.

F. H. SMITH,
Chairman.

Cancer Committee

The Cancer Committee reports the certification of an additional tumor clinic at Lynchburg, Virginia, which was effected on April 9, 1942. This clinic is to be known as the Lynchburg Tumor Clinic and is to function under two codirectors, Dr. Joseph W. Houck, and Dr. John Devine, Jr. Unfortunately, the activation of this new clinic will be delayed until after the war on account of the probable participation of its directors in the military service.

The Chairman of your Committee has been in contact with physicians in Alexandria in connection with the organization of a tumor clinic in that city. After preliminary plans were made it became necessary again to delay further action until after the war.

For the Committee,
EDWIN P. LEHMAN,
Chairman.

Industrial Health

The committee exhibited the American Medical Association's exhibit on industrial health at the meeting of the Medical Society of Virginia at Virginia Beach, October, 1941.

The chairman of the committee attended the Congress on Industrial Health at the Palmer House in Chicago in January, 1942. President Roshier W. Miller appointed him as official representative from the Medical Society or Virginia to the Congress.

The committee met in Richmond on January 30, 1942. At this meeting it was decided to approach the Department of Clinical and Medical Education of the Medical Society of Virginia to see if that department could not this year emphasize industrial medicine in their programs with the component societies. Fortunately, they had already decided to emphasize industrial medicine and health along with war medicine. As a result of this cooperation, five programs on industrial medicine have been put on in different parts of the state. Such programs were given at the Clinich Valley Medical Society, the Richmond Academy of Medicine, the Fourth District and Southside Virginia Medical Society, the Tazewell County Medical Society, and the Northern Neck Medical Society. The latter program included considerable war medicine and was given in Richmond.

In addition to these medical meetings, your committee helped to arrange for speakers on industrial and war medicine on the program of the Virginia State-wide Safety Conference, there being four speakers on these two subjects.

The committee is now endeavoring to have speakers on industrial health on the fall program of the Virginia Manufacturers' Association.

It has sponsored the chest X-ray program of the State Health Department which is doing a survey of tuberculosis in industry, using the miniature photo-fluoroscopic apparatus.

On April 7 and 8, 1942, Dr. Orlen Johnson, Associate Secretary of the Council on Industrial Health of the American Medical Association, Chicago, met with the Richmond members of the committee and told of the work of the Council and the progress that is being made in advancing industrial heatlh throughout the United States.

Just before this report was written, the Richmond members of the committee were working with members of the health division of the Richmond Office of Civilian Defense, the Richmond Academy of Medicine's Committee on Industrial and Contract Practice, the Richmond Health Council and the Richmond Community Council in an effort to set up programs in the Richmond area on industrial health education for physicians, nurses, industrial leaders and labor leaders.

Respectfully submitted,
C. B. BOWYER,
H. W. DECKER.
H. T. HAWKINS,*
GEORGE McL. LAWSON,
I. C. RIGGIN,
H. U. STEPHENSON,
W. R. WHITMAN,
FRED J. WAMPLER,
Chairman.

Study of Clinical Laboratories

It is the feeling of the Chairman of this Committee that any attempt to investigate the clinical laboratories of the State should be postponed for the duration of the war. Transportation is uncertain and all laboratories are experiencing many difficulties with personnel and with supplies. Under the circumstances such a survey would be unfair.

*Dr. Hawkins died July 30, 1942.

The Chairman also feels that the conditions have changed since the resolution to appoint this Committee was offered by the Syphilis Control Committee. Under the Marriage Examination Law, the State Health Department must approve all laboratories for making tests for syphilis. It would appear that one of the chief reasons for the original resolution no longer exists.

Respectfully submitted,

W. E. BRAY,
Chairman.

Delegates to American Medical Association Atlantic City, June 8-12, 1942

The 1942 meeting of the A.M.A. was held in the shadow of war activities and these activities were reflected in many of the matters brought before the House of Delegates.

In spite of the war and of travel barriers this meeting had a registered attendance of 8,238. Of these 146 were registered from Virginia. Of special interest was the attendance of a large group of foreign physicians particularly from our sister republics to the South of us. Foreign attendance accounted for 140 registrations.

One of the first actions of the House of Delegates was to confer the Distinguished Service Award on Dr. Ludwig Hektoen, noted pathologist.

The addresses of President Frank Lahey and President-Elect Fred W. Rankin dealt largely with the problems of medicine in relation to the military and civil needs of our country during war. These addresses should be read in their entirety as published in the *Journal of the A.M.A.* Dr. Irvin Abel presented the report of the Committee on Medical Preparedness. This report outlined modestly the activities of this Committee on organizing and preparing our profession for the impact of war. Your delegates urge that each physician read this report in detail. We feel that this activity of the A.M.A. as carried out by the Committee on Medical Preparedness has been of inestimable benefit to the country in preparing for war. The vast amount of data accumulated pertaining to our medical resources for war has been turned over to the Procurement and Assignment Service.

The House of Delegates was briefly addressed by Maj. Gen. James C. Magee, Surgeon General of the Army. He expressed the belief that the quality of medical care now being rendered the American soldier had never been excelled by any nation.

The Committee on sections and section work introduced a resolution providing that representatives of sections of the scientific assembly be *ex officio* delegates without the right to vote. This resolution carried but will have to lay over one year as it involves a change in the constitution. The effect of this action will be to increase the number of delegates apportioned among the several states. A resolution to increase the membership of the Board of Trustees from nine to eleven was rejected.

It is a pleasure to report that the House of Delegates elected to the office of President-Elect Dr. James E. Paullin of Atlanta. We feel sure that this will be a source of real gratifictaion to his many friends in Virginia.

The very able and efficient General Chairman on Arrangements for the Atlantic City meeting, Dr. William J. Carrington of Atlanta City, was elected Vice-President.

WALTER B. MARTIN,
J. M. EMMETT.

Delegate to U. S. Pharmacopoeial Convention Cleveland, April 7, 1942

When the U. S. Pharmacopoeial Convention held its Decennial Meeting in Washington in May, 1940, the President of the Convention was requested to appoint a committee charged with the duty of revising the constitution and by-laws of the Convention so as to make these instruments better suited for present-day pharmacopoeial needs. This meeting adjourned to be reconvened in Cleveland on April 7, 1942, at the Statler Hotel. The committee appointed to revise the constitution and by-laws was made up of representative men from the medical, pharmaceutical, and allied medical sciences. It is gratifying to all us Virginians to know that Dean Wortley F. Rudd played a very active part in the work of this committee.

At the Cleveland meeting the revised constitution was read and accepted, but because of legal opinion to the contrary, could not be adopted until it had been passed by the 1950 Convention. It was deemed allowable for the revised by-laws to be considered and voted on. After deliberations lasting for some three hours, during which several changes were made from the floor, the Convention unanimously approved the revised by-laws, to go into effect at the 1950 Pharmacopoeial Convention.

The revised constitution and by-laws will do much to obviate previous criticisms leveled at the Pharmacopoeia, and should go a long ways in making this book even more useful and important than it is at the present time.

On the day preceding this meeting there was a medical-pharmaceutical conference held at the Statler Hotel, during which discussion was had on the problem of cementing more closely the two professions of medicine and pharmacy. Out of this only good is bound to come, particularly if the medical profession, and especially the medical journals, will take an active part in disseminating information important from the standpoint of medical-pharmaceutical relationships.

The following is the program of this Conference:

Under the auspices of the Joint Committee of the American Medical Association and the American Pharmaceutical Association.

COMMITTEE FOR MEDICINE—Harold N. Cole.
Morris Fishbein.
Theodore G. Klumpp.
Austin E. Smith.
Torald Sollmann.

COMMITTEE FOR PHARMACY—B. V. Christensen.
Charles H. Evans.
E. F. Kelly.
Robert C. Wilson.

PROGRAM

Afternoon—2 p. m. Dean Torald Sollmann, presiding.

1. Evolution of the Apothecary—Howard Dietrick.
2. Trends of Pharmaceutical Practice—E. F. Kelly.
3. Is the Program of Pharmaceutical Education Justified? Robert C. Wilson.

Evening—Dinner 6:30—Dean B. V. Christensen, presiding.

Address—

Status of Medicine and Pharmacy in the War—and After. Morris Fishbein.

H. B. HAAG,
Delegate.

DELEGATES TO ROANOKE MEETING.

The following have been reported as delegates and alternates from the component societies to the annual meeting of the Society at Roanoke. If your Society has not reported, will you please send names at once to headquarters, 1200 East Clay Street, Richmond.

Delegate	*Alternate*
Accomack	
Dr. C. E. Critcher	Dr. R. J. White
Albemarle	
Dr. E. P. Lehman	Dr. R. V. Funtsen
Dr. W. H. Wood	Dr. E. W. Kirby, Jr.
Dr. F. D. Woodward	
Alexandria City	
Dr. H. A. Latane	Dr. J. W. Love
Alleghany-Bath	
Dr. H. B. Hudnall	Dr. R. L. Claterbaugh
Dr. S. P. Hileman	Dr. R. A. Warren
Arlington	
Dr. W. C. Welburn	Dr. H. L. Bastien
Augusta	
Dr. Guy R. Fisher	
Dr. H. G. Middlekauff	
Bedford	
Dr. T. P. West	Dr. M. P. Rucker
	Dr. J. G. Jantz
Botetourt	
Dr. E. W. Dodd	Dr. W. N. Breckinridge
Charlotte	
Dr. Thomas Watkins	Dr. Wm. R. Martin
Culpeper	
Dr. D. W. Kelly, Jr.	Dr. Granville Eastham
Danville-Pittsylvania	
Dr. I. C. Harrison	Dr. P. W. Miles
Dickenson-Buchanan	
Dr. P. Q. Daniel	Dr. J. C. Moore
Dr. T. C. Sutherland	Dr. R. L. Phipps
Elizabeth City	
Dr. F. A. Kearney	Dr. R. B. Newman
Fairfax	
Dr. W. D. Chase	Dr. Sigmund Newman
Fauquier	
Dr. M. B. Hiden	Dr. J. E. Knight
Floyd	
Dr. S. T. Yeatts	Dr. J. M. Harman
Fourth District and Southside	
Dr. J. M. Habel	Dr. H. C. Rucker
Dr. Frank Lukin	Dr. D. A. Christian
Dr. T. H. Anderson	Dr. W. C. Harman
Dr. H. M. Snead	Dr. R. H. Manson
Dr. C. E. Martin	Dr. G. M. Naff
Dr. W. D. Kendig	Dr. H. E. Whaley
Dr. W. W. Wilkinson	Dr. W. J. Ozlin
Dr. J. Newton Dunn	Dr. J. A. B. Lowry
Dr. O. H. Whitlock	
Dr. H. C. Alexander	Dr. H. B. Holsinger
Dr. Lee Barksdale	Dr. A. T. Brickhouse
Dr. B. H. Knight	Dr. W. W. Seward
Dr. R. B. McEwen	Dr. T. S. Jennings
Fredericksburg	
Dr. R. J. Payne	Dr. L. F. Lee
Dr. W. A. Harris	Dr. A. M. Arritt
Dr. John E. Cole	Dr. J. R. Travis
Hanover	
Dr. I. K. Redd	Dr. J. T. Vaughan
Isle of Wight	
Dr. Rea Parker	Dr. Ivan Steele
James River	
Dr. O. L. Huffman	Dr. Garland Dyches
Dr. T. L. Driscoll	Dr. Nash Snead
Dr. J. H. Yeatman	Dr. L. W. Hulley
Lee	
Dr. J. H. Dellinger	Dr. B. C. Grigsby
Loudoun	
Dr. W. O. Bailey	Dr. G. H. Musgrave
Louisa	
Dr. H. S. Daniel	Dr. H. G. Byrd
Lynchburg Academy	
Dr. S. E. Oglesby	Dr. H. L. Riley
Dr. E. G. Scott	Dr. E. A. Harper
Mid-Tidewater	
Dr. R. D. Bates	
Dr. Hawes Campbell	
Dr. Clarence Campbell	
Dr. J. W. Chinn	
Dr. H. F. Hoskins	
Dr. J. R. Parker	
Dr. N. D. Nelms	
Dr. J. W. Smith	
Nansemond	
Dr. C. H. Dawson	Dr. O. R. Yates
Nelson	
Dr. B. F. Randolph	Dr. H. G. Dickie
Norfolk	
Dr. M. S. Fitchett	Dr. N. G. Wilson

Delegate	*Alternate*
Dr. A. B. Hodges	Dr. N. F. Rodman
Dr. C. L. Harrell	Dr. R. B. Grinnan
Dr. Jas. W. Anderson	Dr. C. J. Andrews
Dr. P. St. L. Moncure	Dr. R. H. Redwood
Dr. A. A. Burke	
Northampton	
Dr. J. Walker Jackson	Dr. J. M. Lynch
Northern Neck	
Dr. C. Y. Griffith	Dr. W. N. Chinn
Dr. H. L. Segar	Dr. J. H. Hare
Dr. L. E. Cockrell	Dr. R. E. Booker
Dr. E. R. Moorman	Dr. G. H. Steuart
Northern Virginia	
Dr. P. W. Boyd	Dr. R. F. Cline
Dr. Frederick Amiss	Dr. George Long
Dr. J. P. Snead	Dr. J. G. Brown
Dr. C. O. Dearmont	Dr. C. H. Iden
Dr. H. W. Miller	Dr. George Parrott
Dr. F. D. Whitworth	Dr. Elizabeth Sherman
Orange	
Dr. Lewis Holladay	Dr. J. P. Hankins
	Dr. E. B. Dovell
Patrick-Henry	
Dr. J. T. Shelburne	Dr. B. A. Hopkins
Dr. D. L. Fleshman	Dr. E. M. McDaniel
Piedmont	
Dr. H. G. Byrd	Dr. D. C. Smith
Princess Anne	
Dr. Ira Hancock	Dr. H. F. Dormire
Richmond Academy	
Dr. S. A. Anderson, Jr.	Dr. T. N. Barnett
Dr. I. A. Bigger	Dr. Harvey Haag
Dr. Wyndham Blanton	Dr. J. S. Horsley
Dr. A. C. Monroe	Dr. T. F. Gill
Dr. Rex Blankinship	Dr. J. A. Shield
Dr. W. P. Barnes	Dr. W. L. Peple
Dr. T. B. Washington	Dr. W. R. Bracey
Dr. Frank Pole	Dr. O. L. Hite
Dr. F. S. Johns	Dr. D. S. Daniel
Roanoke Academy	
Dr. F. A. Farmer	Dr. J. D. Willis
Dr. S. B. Cary	Dr. G. S. Hurt
Dr. T. D. Armistead	Dr. W. W. S. Butler
Dr. A. M. Groseclose	Dr. Fred Hamlin
Rockbridge	
Dr. E. V. Brush	Dr. R. S. Munger
Rockingham	
Dr. B. S. Yancey	Dr. A. W. Graves
Russell	
Dr. W. C. Elliott	Dr. R. F. Gillespie
Southampton	
Dr. J. A. Grizzard	Dr. E. M. Babb
Southwestern	
Dr. M. B. Caldwell	Dr. A. B. Greiner
Dr. R. D. Campbell	Dr. W. H. McCarty
Dr. Jas. P. King	Dr. R. H. Grubbs
Dr. R. F. Thornhill	Dr. G. W. Skaggs
Dr. J. G. Cox	Dr. W. A. Porter
Dr. B. F. Eckles	Dr. V. O. Choate
Dr. H. W. Bachman	Dr. J. C. Motley
Dr. W. C. Caudill	Dr. S. A. Tuck
Dr. A. B. Woolwine	
Tazewell	
Dr. Rufus Brittain	Dr. M. E. Johnston
Warwick	
Dr. J. F. Gayle	Dr. J. W. Sayre
Dr. H. W. Potter	Dr. E. B. Mewborne
Williamsburg-James City	
Dr. A. M. Sneed	Dr. T. B. Henderson
Wise	
Dr. Frank E. Handy	Dr. Glenn G. Foster
Dr. W. A. Baker	Dr. Geo. W. Botts

Woman's Auxiliary
to the
Medical Society of Virginia

President—MRS. E. LATANE FLANAGAN, Richmond.
President-Elect—MRS. H. W. ROGERS, Norfolk.
Recording Secretary—MRS. HAROLD W. POTTER, Hilton Village.
Corresponding Secretary—MRS. A. S. LILLY, Richmond.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Parliamentarian—MRS. FLETCHER J. WRIGHT, Petersburg.
Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

"The Doctor's Wife in War Time"

Our national auxiliary gave us Health Defense as our objective for this year. Accepting this challenge, I took the theme, "Educate and Evaluate". Educate ourselves in Health problems and Evaluate our learning so as to be the greatest help to the greatest number, not only in our own auxiliary, but in the other women's organizations to which we belong.

Come to Roanoke on October 6, attend our meeting in Hotel Roanoke at nine o'clock and find out just what degree of success has been ours. The President of the Medical Society of Virginia, Dr. Roshier W. Miller of Richmond, is to be our guest speaker. At one o'clock we have a complimentary bridge luncheon given us by the local committee at the Country Club.

The Post-Convention Board meeting will be in the late afternoon and in the evening we play again at the subscription banquet and dance. All women who come to the Convention are asked to register.

In my honest opinion, after a thorough study of the Woman's Auxiliary at work, I believe it to be a very vital part in the advancement of organized medicine. I know every doctor's wife in Virginia is busy with war work because there is much to be done, and we always do our part. As important as this all may be, however, there is some other woman somewhere who can carry on, but in the work of the Medical Auxiliary, only the doctor's wife can do it.

Come to Roanoke!

(MRS. E. LATANE) LOUISE W. FLANAGAN,
President, Woman's Auxiliary to the Medical Society of Virginia.

PROGRAM

Twentieth Annual Meeting

Roanoke, Virginia **October 5, 6, 7, 1942**

Headquarters: Hotel Roanoke

Registration begins Monday evening at 7:00 P. M., and every woman attending the Convention is requested to register promptly upon arrival, either as a visitor or delegate. (Registration fee—25 cents.)

CHAIRMAN OF REGISTRATION—Mrs. Austin I. Dodson.

CONVENTION CHAIRMAN — Mrs. Mortimer H. Williams.

Monday, October 5th

8:00 P. M.—Pre-convention Board meeting. Hotel Roanoke.

All Local Presidents, Presidents-Elect, State Officers and Chairmen of Standing Committees are expected to attend this meeting.

Tuesday, October 6th
General Annual Meeting
Open to all women attending the Convention
9:00 A.M.—Hotel Roanoke

Mrs. E. Latane Flanagan, President, presiding.

Invocation—Mrs. Hawes Campbell, President, Auxiliary to Mid-Tidewater Medical Society.

Address of Welcome—Mrs. Mortimer H. Williams, Chairman of Committee on Local Arrangements for Ladies.

Response — Mrs. P. E. Schools, President, Auxiliary to the Richmond Academy of Medicine.

Report of Committee on Registration and Credentials—Mrs. Austin I. Dodson.

Roll Call—Mrs. Harold W. Potter.

In Memoriam—Mrs. A. S. Lilly.

Minutes Nineteenth Annual Convention.

Minutes Post-Convention Board Meeting.

Minutes Mid-Winter Board Meeting.

Minutes Pre-Convention Board Meeting.

President's Message—Mrs. E. Latane Flanagan.

Reports—

- Vice-Presidents—
  - Mrs. W. Clyde West, Alexandria.
  - Mrs. Louis Kolipinski, Petersburg.
  - Mrs. Paul Pearson, Ayletts.
  - Mrs. Henry Townsend, Marshall.
- Corresponding Secretary—Mrs. A. S. Lilly.
- Treasurer—Mrs. Reuben F. Simms.
- Organization—Mrs. H. W. Rogers.
- Program and Health—Mrs. C. E. Holderby.
- Finance—Mrs. Paul Pearson.
- Public Relations—Mrs. Henry A. Hornthal.
- Hygeia—Mrs. H. A. Spitler.
- Revisions—Mrs. J. Walker Jackson.
- Press and Publicity—Mrs. Henry Snead.
- History, Archives and Research—Mrs. Wm. Lett Harris.
- Exhibit—Mrs. J. L. DeCormis.
- Jane Todd Crawford Memorial—Mrs. Hawes Campbell.
- Leigh-Hodges-Wright Memorial — Mrs. Fletcher J. Wright.
- Cancer Control—Mrs. Albert G. Horton.
- Legislation—Mrs. P. M. Chichester.
- Membership—Mrs. W. Clyde West.
- Bulletin—Mrs. Franklin D. Wilson.
- Parliamentarian—Mrs. J. Fletcher Wright.

Music—Mrs. W. L. Cosby, Violinist
Mrs. D. L. DeCormis, Pianist

Reports of Local Presidents—

- Auxiliary to Alexandria Medical Society—Mrs. G. D. Denton.
- Auxiliary to Accomac-Northampton Medical Societies—Mrs. E. Holland Trower.
- Auxiliary to Mid-Tidewater Medical Society—Mrs. Hawes Campbell.
- Auxiliary to Norfolk Medical Society—Mrs. Walter P. Adams.
- Auxiliary to Petersburg Unit of Fourth District Medical Society—Mrs. Munford Yates.
- Auxiliary to Richmond Academy of Medicine—Mrs. P. E. Schools.
- Auxiliary to Williamsburg-James City County Medical Society—Mrs. E. T. Terrell.
- Auxiliary to Warwick County Medical Society—Mrs. Guy Amory.
- Auxiliary to Loudoun-Fauquier Medical Society—Mrs. Stuart McBryde.
- Auxiliary to the Wythe County Medical Society—Mrs. J. F. Repass.

Delegates—

- Woman's Auxiliary to A.M.A. Meeting—Mrs. H. W. Rogers.
- Woman's Auxiliary to Southern Medical Association—Mrs. E. Latane Flanagan.

Unfinished Business.
New Business.
Recommendations from the Board.
Presentation of Membership Trophy — Mrs. Franklin D. Wilson, Chairman.
Acceptance of Trophy—
Introduction of Guest Speaker—Dr. E. Latane Flanagan.
Guest Speaker—Dr. R. W. Miller, President, Medical Society of Virginia.
Introductions—
President-Elect, Medical Society of Virginia—Dr. J. M. Emmett.
Advisory Committee—
Dr. John Powell Williams, Richmond.
Dr. H. W. Rogers, Norfolk.
Dr. Hawes Campbell, Venter.
Dr. W. L. Powell, General Chairman of the Convention.
Reports—
Committee on Resolutions—Mrs. J. B. Dalton, Chairman.
Nominating Committee—Mrs. G. W. Holland.
Election of Officers.
Installation of Officers.
Presentation of Gavel.
Introduction of President—Mrs. H. A. Latane.
President's Address—Mrs. H. W. Rogers.
Music—Mrs. W. L. Cosby, Violinist
Mrs. D. L. DeCormis, Pianist
Adjournment.

1:00 P.M.

Complimentary Bridge Luncheon, Country Club, Mrs. Mortimer H. Williams, Presiding.

5:00 P.M.

Post-Convention Board Meeting, Hotel Roanoke, Mrs. H. W. Rogers, Presiding.

7:00 P.M.

Banquet and Dance (Subscription) Hotel Roanoke.

Wednesday, October 7th
8:00 A.M.

Past Presidents' Breakfast, Hotel Roanoke—Mrs. Hawes Campbell, Chairman.

Norfolk County Auxiliary.

At the annual meeting of the Auxiliary in May, the following officers were elected for the year 1942-1943:

President—Mrs. W. E. Butler
President-elect—Mrs. R. M. Reynolds
Vice-Presidents—Mrs. W. Tilden Smith
Mrs. John St. George
Mrs. S. B. Pope
Recording Secretary—Mrs. Chas. H. Lupton
Assistant—Mrs. Lemuel Mayo
Treasurer—Mrs. James W. Anderson
Assistant—Mrs. W. R. Tyson
Corresponding Secretary—Mrs. R. Bryan Grinnan
Assistant—Mrs. Brock Jones
Parliamentarian—Mrs. M. N. King
Historian—Mrs. Starke Sutton

The meeting took place at the home of the retiring president, Mrs. Walter P. Adams, and was followed by a delightful tea, the Auxiliary being the guests of Mrs. Adams.

LILA I. SMITH
(MRS. C. C. SMITH)

Book Announcements

Books received for review are promptly acknowleded in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us the same.

Central Autonomic Regulations in Health and Disease. With Special Reference to Hypothalamus. By HEYMEN R. MILLER, M.D., Associate Attending Physician Montefiore Hospital, New York City. Introduction by JOHN F. FULTON, M.D., M.A., D.Phil., (Oxon) Sterling Professor of Physiology, Yale University. Grune and Stratton. New York. 1942. xx-430 pages. Illustrated. Cloth. Price $5.50.

The Care of the Aged. (Geriatrics). By MALFORD W. THEWLIS, M.D., Attending Specialist, General Medicine, U. S. P. H. Hospitals, New York City; Attending Physician, South County Hospital, Wakefield, R. I.; Special Consultant, Rhode Island Department of Public Health. Fourth Edition. Thoroughly Revised. With 50 Illustrations. St. Louis. The C. V. Mosby Company. 1942. 589 pages. Cloth. Price $7.00.

The Function of the Orgasm. Sex-Economic Problems of Biological Energy. By WILLIAM REICH. Translated from the German Manuscript by Theodore P. Wolfe. Orgone Institute Press. New York. 1942. xxxvi-368 pages. Cloth. Price $3.00.

The National Formulary. Seventh Edition. Prepared by the Committee on National Formulary. By Authority of the American Pharmaceutical Association. Official from November 1, 1942. Published by the American Pharmaceutical Association, Washington, D. C. 1942. viii-690 pages. Cloth.

Blood Grouping Technic. A Manual for Clinicians, Serologists, Anthropologists, and Students of Legal and Military Medicine. By FRITZ SCHIFF, M.D., Late Chief of the Department of Bacteriology, Beth Israel Hospital, New York, N. Y. And WILLIAM

C. BOYD, Ph.D., Associate Professor of Biochemistry, Boston University, School of Medicine; etc. 1942. Interscience Publishers, Inc. New York. xiv-248 pages. Illustrated. Cloth. Price $5.00.

Within a little over two hundred pages, this book is an encyclopedia of blood grouping and its ramifications. All the aspects of blood grouping technic are considered with strict precision, being based upon an orderly outline-form.

Details are most emphasized. For the beginner, the theoretical and actual practical methods of grouping are first dealt with. Subgroups and unusual serological factors are next considered; for the first time in any textbook the Rh factor is mentioned. Then follow the modes of application of the principles and practice of blood grouping: transfusion of blood and blood substitutes, with a consideration of the blood-bank; determination of the survival time of transfused erythrocytes; problems of relationship, including disputed paternity; forensic applications, including blood stains; and determination of group of human materials other than blood. The final section is an extensive discussion of the anthropological and ethnological aspects of blood groups.

The greater portion of the book deals with material beyond the realm of most students and physicians. The authors state that they make no pretense at completeness; however they probably approach it more closely than any of their predecessors, and with brevity. It is a book I should like to have on my reference shelf, because it contains the theoretical and practical fundamentals, and has also kept pace with all the important modern developments.

A.K.

Clinics. Edited by George Morris Piersol, M.D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania. Published Bi-Monthly $12.00 a year. J. B. Lippincott Company. Philadelphia.

This is the first number of a periodical which is to take the place of the *New International Clinics*. It differs in several respects:

1. It is smaller and more convenient in size.

2. It will be issued bi-monthly instead of quarterly.

3. Each number will feature a symposium and thus be based on a subject rather than on geographical position.

The present number has a symposium on the very timely war subject of burns, made up of six contributions from such widely scattered places as Philadelphia, Detroit, St. Louis and Montreal.

There are also three original contributions on various subjects and seven clinics from New Orleans.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

WYNDHAM B. BLANTON, M. D.
Editor

AGNES V. EDWARDS
Business Manager

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, $2.00. Single Copies 25c.

VOL. 69. SEPTEMBER, 1942. No. 9

Editorials

Are Medical Meetings Essential In Time of War?

MOST physicians think medical meetings are essential in time of war. Some, of course, do not. Those high-ups in Washington who appreciate the problem and are qualified to speak, think so. The American Medical Association thinks so. The state societies think so. Dr. H. C. Christian thought so in the last war and so expressed himself. It was his belief that "books, meetings, contacts, discussions, and teachers are our armamentarium for progress. Contact with colleagues eager to learn, listening to discussions by those capable of teaching, witnessing demonstrations and clinics, and seeing scientific exhibits, lead to more reading and to better observation of patients. Herein lies medical progress." Dr. C. L. Stevens, secretary of the Medical Society of the State of Pennsylvania, declared before that body in 1917 that "the longer the war continues and the more our members enter the service, the more the interests of our profession and of our country demand that medical organization shall not be allowed to wane."

Are medical meetings essential at this time? If our conception of medical progress and its relation to the war effort is correct, it would seem that they are. There are many physicians in civil life who need to freshen up, perhaps more so now than ever before, since they are faced with the problem of broadening their practice into fields from which they have long since retreated. Those medical officers who are stationed in the areas in which medical meetings are held will find in such gatherings of their confréres a good opportunity to discuss the new and often perplexing problems of the medical care of troops in the field. Medical meetings in war time furnish one of the best channels of contact between the government and the profession. They afford an easy and direct way of informing pysicians as to what their government expects of them. Every physician, even in time of war, must take time for a vacation and many physicians have formed the life long habit of combining attendance upon

medical meetings with their vacations. It must be remembered that medical meetings are entirely voluntary. Only those attend who can conveniently do so and who think they profit from them. So long as our medical meetings are built on a solid scientific program, avoid waste time, are stripped of elaborate social features and geared to the war effort, they will be helpful in a time like this. It is unthinkable, should the present emergency last for years—and we must face the fact that it may—that our medical organizations should fold up when they still have so many benefits to confer.

The Hazards of Hospital Hospitality.

AS medical students we first became aware of the sudden unexplained rises of temperature that marked many charts of hospital patients and seemed to be definitely connected with a certain day of the week, namely Sunday. This is the day for mass visitation in the hospitals and it is a hazardous day for hospital patients. Almost everyone is familiar with the noise and confusion associated with visiting hours in hospitals, especially on Sundays when the whole family elects to enter *en masse,* but only physicians are conscious of the excitement and fatigue and consequent set backs in the progress of a patient that follows in the wake of such kindly intentioned hordes.

Rules governing visitors in hospitals vary, of course, with different institutions, some being stringent and some being lax, but all hospitals put some limit to the hours when visitors are admitted, since it is obvious that patients cannot be properly examined, medicated or fed in the presence of company, and that crowded elevators and halls, and noisy friends and relatives spreading dirt and confusion, are in striking contrast to the quiet, restful isolation to which hospital patients should be entitled.

New light was thrown upon this menace of the visitor to hospital patients by Mundo and McCann in an article appearing some months ago in the *American Journal of the Diseases of Childhood.* These authors showed by bacteriological examinations of the nasopharynx of hospitalized infants that the sources of secondary infection which they were able to demonstrate were not fellow patients but the personnel of the hospital and visitors. They believed the hospital patient becomes a prey to the secondary invaders which his visitors, carriers of a host of respiratory diseases, bring to him. They pointed out that the larger number of outsiders permitted to enter the wards as visitors when there is overcrowding must be considered as the chief cause of the increase in secondary infections acquired by patients in overcrowded hospitals. They found that air conditioning and the restriction of adult traffic to a minimum strongly reduced air contamination.

It would seem that it is high time that hospitals addressed themselves to this serious menace of the germ carrying visitor. Something might be done to limit their number and the duration of their stay. Perhaps they might be required to wear mask, cap and gown. An especially trained receptionist, by a program of education, by sympathetic and intelligent response to inquiries, and by the tactful explanation of why visitors are hazardous to hospital patients might accomplish much, not only in protecting the sick, but in satisfying anxious friends and relatives.

Dangerous Drugs.

WE are under obligation to the Virginia Pharmaceutical Association for calling our attention to a law recently gone into effect but perhaps not fully appreciated by the medical profession.

At the 1942 session of the General Assembly of Virginia, a measure was enacted, Chapter 209, Acts of Assembly, 1942, designated as the Dangerous Drug Law. This act regulates the prescribing for, and the dispensing of, drugs in the Barbiturate group

and those in the Sulfa group. The measure was introduced at the request of the medical profession, and its enactment was sanctioned by the pharmaceutical organizations. It became effective June 27, 1942.

Under the statute a written prescription is required when any drug in the Barbiturate or Sulfa group is prescribed. A verbal order or a telephoned order does not constitute a prescription, and no pharmacist is justified in undertaking to fill such an order unless he has a definite assurance that the written prescription will be promptly supplied to him for proper filing.

The provisions of the law differ somewhat, however, with respect to drugs in the two groups. In the case of drugs in the Barbiturate group, the prescription may be refilled any specified number of times, if the physician writes upon the face of the prescription that it may be refilled and specifies the number of times. In the case of prescriptions which contain a Barbiturate, but in which the Barbiturate is not the principal ingredient, a prescription may be refilled unless the physician writes upon the face of the prescription, "Not to be refilled."

In the case of drugs in the Sulfa group, they may be sold only on the written prescription of a physician, and under no circumstances may they be refilled. A new prescription is required each time Sulfa drugs are dispensed, except where they are intended for external use and comply with the provisions carried in Section 1698-d of the statute.

The law, of course, does not apply to physicians only, but equally to prescribing dentists and prescribing veterinarians.

Standard Nomenclature.

THE third and most recent edition of *Standard Nomenclature,* from the press of the American Medical Association, should appeal to all who are interested in a logical system of classifying disease and operative procedure. Fourteen years ago the New York City Academy of Medicine, backed chiefly by the Commonwealth Fund, initiated this undertaking that has proved of great service to physicians and hospitals everywhere. During these years the progress of medicine has necessitated many additions, deletions and corrections of the material in former editions. The present volume represents a complete revision, and in it no less than three thousand five hundred changes have been made. Its editors and the American Medical Association, which now sponsors this useful work, are to be congratulated on its completion.

A Review.

THE dust jacket of *Night of Flame* (Reynal & Hitchcock, Inc., New York City, $2.50), yet one more novel obsessed with the drama of medicine and surgery, states that the author has a surprising knowledge of human beings. A slight correction is suggested, just the moving of an adjective: the author has a knowledge of surprising human beings.

The physicians who amuse themselves with this book will be astonished at the physical stamina of the critically ill persons in the strange hospital here depicted, if they are astonished at nothing else,—and there is a good deal else to cause astonishment.

Mr. Dyson Carter is said to be a chemical engineer so precocious that he began his career at thirteen and entered college at fifteen. In these stern days the year he took from his work to write this book seems a pity. If he must try again won't he use, please, a little more poetic justice in the punishment meeted out by his catastrophes? It is lamentable that the predatory Dr. Gerard Stevens survived the fire and is still at large.

Societies

Alexandria Medical Society.

This Society, at its annual meeting held recently, elected Dr. J. Cameron McCluer as president and Dr. Alfred Abramson as vice-president. Dr. S. H. Williams was again named secretary-treasurer.

The Augusta County Medical Society

Held its annual meeting early in August at Ingleside Hotel, Staunton, at which time case reports were presented. At the business session, the following officers were elected for the ensuing year: President, Dr. H. J. Morton, Stuarts Draft; vice-presidents, Dr. J. H. Thomas, Greenville, Dr. George Kinser, Waynesboro, and Dr. W. M. Phelps, Staunton; secretary, Dr. Alex. F. Robertson, Jr.; and treasurer, Dr. J. E. Womack, Staunton. The Society completed its meeting with dinner at the hotel.

Botetourt County Medical Society.

We have just been advised that present officers of this Society are Dr. L. A. Micou of Eagle Rock president, and Dr. E. B. Morgan of Fincastle secretary.

Fauquier County Medical Society.

At a meeting of this Society on July the 30th, Dr. V. L. McCullers of Remington was elected president, and Dr. J. Frank Folk of Warrenton secretary-treasurer. Dr. W. G. Trow of Warrenton and Dr. Wade C. Payne of Haymarket were named vice-presidents.

The Northampton County Medical Society

Met on August 12 in a special session complimentary to Dr. John R. Hamilton of Nassawadox, who had volunteered for service in the Navy. He received a commission as Lieutenant Commander and was to report for active duty on August 20. The Society presented him with a wrist watch, the presentation being made by Dr. S. K. Ames who was with the McGuire Unit in France during the First World War.

Patrick Henry Medical Society.

Owing to the fact that Dr. H. M. Price, secretary, has been called into the Army, Dr. F. B. Teague of Martinsville has been named acting secretary of this Society until its annual meeting. Dr. R. H. Walker, also of Martinsville, is its president.

Wise County Medical Society.

Officers of this Society elected at its last annual meeting are: President, Dr. W. B. Barton of Stonega; Vice-presidents, Dr. P. R. Cronlund of Norton, Dr. Frank E. Handy of Appalachia, and Dr. J. D. Culbertson of Coeburn. Dr. C. L. Harshbarger of Norton was re-elected secretary-treasurer. The Board of Censors is composed of Dr. J. H. Hagy of Imboden, Dr. F. S. Givens of Wise, and Dr. F. B. Wolfe of Coeburn.

News

The Roanoke Meeting.

The Medical Society of Virginia is to have its annual meeting in Roanoke, October 5, 6 and 7, and this gives every promise of being interesting and well attended. The program and reports to be considered at business sessions appear in this issue of the MONTHLY and the Roanoke doctors are extending a warm welcome as usual.

Our guests are known to many of our members and it is worth attendance at the meeting just to hear them. They are Dr. James E. Paullin, Atlanta, Ga., Dr. Julian M. Ruffin, Durham, N. C., and Dr. Robert L. Bennett, Warm Springs, Ga., all of whom are outstanding in their work.

Several special societies will hold meetings at this time. Those whose plans are completed are listed in the program.

The question at this time is not shall you go but can you afford not to go? You need this contact with friends, the discussions which are more interesting to be heard first hand, and to see the exhibits. Mark the dates on your calendar now!

Southern Medical Meeting in Richmond.

Section officers of the Southern Medical Association have gotten their plans in excellent shape for the meeting to be held in Richmond, November 10, 11, and 12. Monday and Tuesday have been cut

off this year's program so as to avoid conflict with the traveling of soldiers as much as possible. But it is planned to have this meeting and to make it a good one, even if there are some cuts in the program.

Virginia doctors are urged to be on hand to welcome and be with their friends from all over the South.

Married.

Lt. Julius C. Hulcher, MC., U.S.A., Richmond, and Miss Elsie Wade, Pulaski, August 14th. Dr. Hulcher is a graduate of the Medical College of Virginia in 1941 and is at present stationed at Camp Lee with General Hospital No. 45.

Lt. John Edgar Stevens, MC., U.S.A., and Miss Charlotte Ruth Mooers, both of Richmond, July 31st. Dr. Stevens graduated from the Medical College of Virginia, class of '41.

Lt. William Russell Jones, Jr., MC., U.S.A., and Miss Frances Carlyle Creath, both of Richmond, August 3rd. Dr. Jones is a graduate of the Medical College of Virginia in 1941 and is at present stationed on the West Coast.

Dr. Hunter Sheppard Jackson and Miss Elizabeth Marr Ashbrooke, both of Richmond, August 12th. Dr. Jackson graduated from the Medical College of Virginia in this year's class.

Dr. John Walker of Lynchburg and Mrs. Millian Brooke Somerville of Richmond, August 19.

Dr. J. T. Booth,

Ashland, has recently been appointed county jail physician.

Medical College of Virginia News.

The one hundred fifth session of the Medical College of Virginia, Richmond, opened on July 6 with the following enrollment: medicine, 311; dentistry, 148; pharmacy, 100. The entering class of the school of nursing will report on September 1.

A recent gift of $1,000 for student loans from Miss Mary E. Williamson and a grant of $10,500 from the American Tobacco Company for research in physiology and pharmacology are reported with satisfaction.

Dr. Harvey B. Hagg, professor of pharmacology, and Dr. Everett I. Evans, assistant professor of surgery, spent a week at the Edgewood Arsenal, Maryland, in the study of decontamination and treatment for gas and fire casualties.

Dr. R. J. Wilkinson of Huntington, West Virginia, and Captain Gillie Tyler of Lawson General Hospital, Atlanta, Georgia, were recent college visitors.

President W. T. Sanger has recently returned from a visit to leading medical centres in Canada, the north, and the middlewest.

Register Diathermy Apparatus.

The F. B. I. has stated that it is compulsory for physicians and hospitals to register all diathermy apparatus with the government. To avoid a penalty, those having such machines should secure Form No. 410 at once from the Federal Communications Commission, Washington, D. C., and make reports promptly.

Dr. R. L. Hillman,

After serving Emory and Henry College for the past seventeen years as College Physician and head of the Department of Biology, has taken up industrial practice for the duration of the war, and is now employed by the Clinchfield Coal Corporation at Clinchco.

Dr. Theodore Maisel,

Who was associated in practice with Dr. Marvin E. Nuckols for three years, until the time of his death, has moved his offices to 2618 Grove Avenue, Richmond.

Blood Procurement Project to be Expanded.

The American Red Cross extension of its blood procurement project from an original 900,000 donors during the current fiscal year to a minimum of 2,500,000 has been requested by the Surgeons General of the Army and Navy. Blood collected in this project is processed for use in transfusions by the armed forces.

This almost three-fold increase will require approximately 50,000 volunteer donations a week. The eighteen blood donor centers operated by Red Cross chapters in the more populous areas of the country are rapidly completing plans to increase their quotas, and a few additional centers will be opened to handle this augmented number of donations. In addition to dried plasma, blood collected is to be processed into human serum albumin, also for use in transfusions. The Navy is particularly interested in this serum because it requires less storage space than plasma.

Surgeons' Congress to be in Cleveland.

The 1942 Clinical Congress of the American College of Surgeons, originally scheduled for October at the Stevens Hotel, Chicago, which was taken over August 1 by the U. S. Army Air Corps, will be held in Cleveland, with headquarters at the Cleveland Public Auditorium, from November 17 to 20. The twenty-fifth annual Hospital Standardization Conference sponsored by the College will be held simultaneously.

The program of panel discussions, clinical conferences, scientific sessions, hospital meetings, and medical motion picture exhibitions at headquarters, and operative clinics and demonstrations in the local hospitals and Western Reserve University School of Medicine, has been centered around the many medical and surgical problems relating to the war and consideration of special problems related to the increasing activities for civilian defense.

The officers-elect of the College who will be inaugurated at the Presidential Meeting and Convocation on November 17 are Dr. Irvin Abell of Louisville, President; Dr. Leland S. McKittrick of Boston, First Vice President; and Dr. F. Phinizy Calhoun of Atlanta, Second Vice President.

A large technical exhibition will be housed in the exhibit hall of the Cleveland Public Auditorium.

Dr. J. E. K. Flannagan,

Recently of Richmond, is now located in Marion, where he is associated with the Lee Memorial Hospital.

Dr. J. G. Jantz,

After a time spent in private practice in Kansas, has returned to Bedford where he is engaged in surgical work at the John Russell Hospital, which was recently reorganized.

Marquette University School of Medicine,

Milwaukee, Wisconsin, has been given $1,500.00 by the National Foundation for Infantile Paralysis, Inc., to carry on research work in the fight against infantile paralysis. The purpose of the grant is to study the relationship of nutrition to the morphology and physiology of the neuromuscular apparatus in skeletal muscle. The funds which make possible the Foundation's programs are raised annually in January during the various Celebrations of the President's Birthday.

Dr. Athey R. Lutz,

Class of '27, Medical College of Virginia, well known orthopedic surgeon of Parkersburg, W. Va., entered the Army on August 1st, with the rank of Major in the Medical Corps.

Dr. Kenneth N. Byrne,

Class of '37, Medical College of Virginia, who was practicing in Lexington prior to entering the Army with rank of Lieutenant about eighteen months ago, was in July promoted to a Major in the Medical Corps and is now serving as chief of infirmaries at Fort Eustis.

Dr. Otis G. King,

Class of '31, Medical College of Virginia, and recently on the staff of St. Luke's Hospital, Bluefield, W. Va., entered the Medical Corps of the Army on July the 30th and reported for duty at Fort Eustis.

Conference on Venereal Disease Control Needs in Wartime.

Venereal disease and America's war effort will be discussed by high-ranking medical officers of the War and the Navy Departments, prominent physicians, health officers and others at a Conference in Hot Springs National Park, Arkansas, October 21-24, 1942. Headquarters will be at the Arlington Hotel.

The Conference will be held under the auspices of the United States Public Health Service in conjunction with the Eighth Annual Meeting of the American Neisserian Medical Society. Surgeon General Thomas Parran will preside. State and local health officers, venereal disease control officers, practicing physicians, and all others engaged in venereal disease control activities are urged to attend.

Subjects for discussion will include venereal disease control measures influencing the war effort, epidemiology of syphilis and gonorrhea—1942, wartime veneral disease control education, research influencing the wartime venereal disease control program, and technics of venereal disease education.

Governmental, professional and health organizations to be represented at the Conference include: the War Department, the Navy Department, the Social Protection Section of the Office of Defense Health and Welfare Services, the American Medical Association, the American Neisserian Medical Society, the American Social Hygiene Association,

State and local health departments, and the United States Public Health Service.

Dr. Otis Marshall

Has resigned from the Medical Service of the American Red Cross and for the duration will be Director of Health in Industrial Surgery for the Ecusta Paper Corporation, Brevard, N. C. Dr. Marshall is a Virginian and a graduate of the University of Virginia.

Eastern State Hospital Approved.

Dr. G. W. Brown, Superintendent, has recently been informed by the Council on Medical Education and Hospitals of the American Medical Association and the American Board of Psychiatry and Neurology that the Eastern State Hospital at Williamsburg has been approved for residency in psychiatry.

The approval of this residency is quite a distinction inasmuch as the last published list of approved residencies (*J. A. M. A.* August 1941) in psychiatry included only six instittutions in the entire south which are recognized for this specialty. Only two other institutions in Virginia and North Carolina—Universiy of Virginia Hospital and Duke University Hospital—were on the approved list.

This residency, which requires two years for its completion and which offers training in all phases of psychiatry, is open to properly qualified physicians who desire training in this important medical specialty.

Dr. L. C. Haynes,

Until recently of Mt. Jackson, is now at the Veterans Administration Facility in Waco, Texas, where he is taking special training in the Adjudication Department as rating specialist medical.

Dr. Florence I. Mahoney,

For several years physician to the Mary Baldwin College, Staunton, has moved to Missouri, where she is connected with Stephens College in Columbia.

The Mississippi Valley Medical Society

Will hold its eighth annual meeting, an Intensive Post-Graduate Assembly for General Practitioners, in the Hotel Lincoln-Douglas, Quincy, Ill., September 30, October 1, 2. The program will be given by twenty-five clinician-teachers who will give over forty lectures, demonstrations, instructional courses, etc. A special Physicians' Sports Event program will be a feature on October 1, with prizes for golf, skeet, bowling, archery and horse-shoes.

Every ethical physician is cordially invited to attend and no registration fee will be charged physicians in the uniform of the armed forces of the United States. Further information may be secured from the Secretary, Harold Swanberg, M.D., W. C. U. Building, Quincy, Ill.

Obituary Record

Dr. Horace Taylor Hawkins,

Waynesboro, died July 30th, after an illness of six weeks. He was a native of Richmond and fifty-four years of age. Dr. Hawkins graduated from the Medical College of Virginia in 1913. He practiced in Clover before moving to Waynesboro in 1928 where he was plant physician for Du Pont. Dr. Hawkins was a Mason and a past president of the Augusta County Medical Association. He had been a member of the Medical Society of Virginia since 1913 and at the time of his death was a member of the Committee on Industrial Health. His wife, two sons and a daughter survive him.

Dr. Robert Newton Graham,

St. Charles, was killed by a train at Huntington, W. Va., on July 29th. He was sixty-three years of age and graduated from the former Chattanooga (Tenn.) Medical College in 1908. Dr. Graham had practiced at St. Charles since 1922, and had been a member of the Medical Society of Virginia for 18 years. His wife and a daughter survive him.

Dr. Charles Lewis Dillon,

Boone Mill, died July 22nd, at the age of seventy-three. He was a graduate of the former University College of Medicine in 1899 and had practiced at Boone Mill for the past twenty-five years. His wife and three sons survive him.

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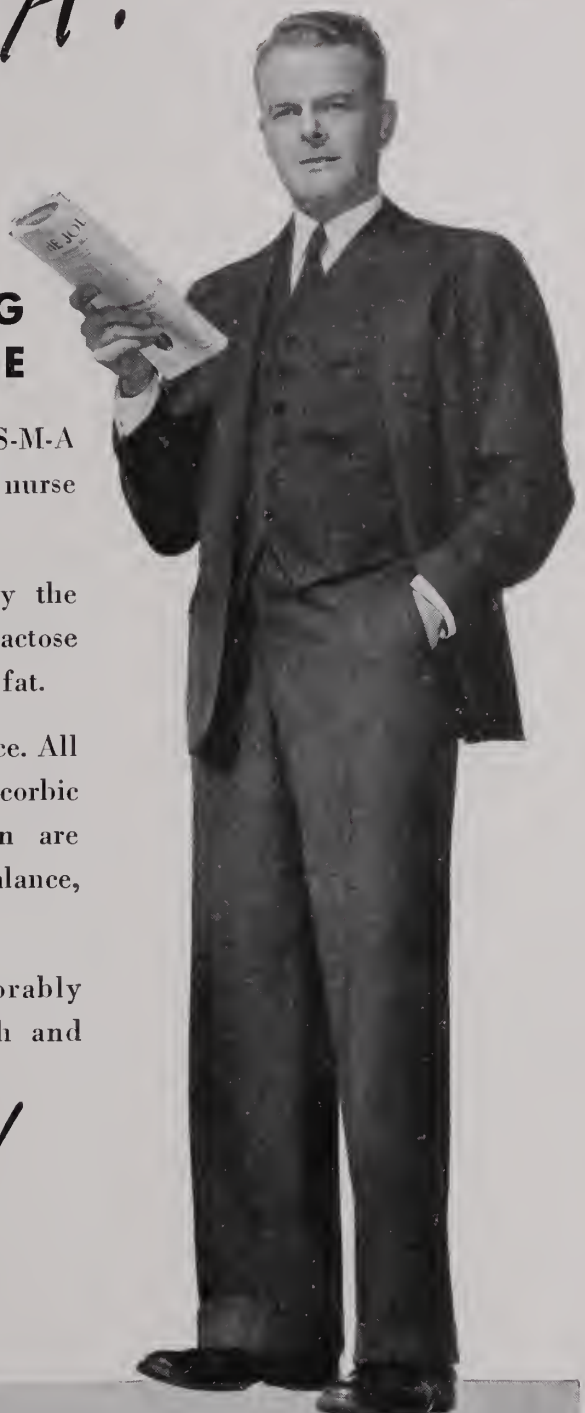

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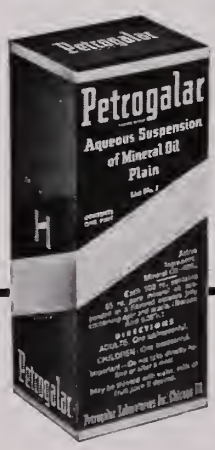

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WHOLE No. 1084.

RICHMOND, VA., OCTOBER, 1942.

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Guest Editorial

The Doctor and Tomorrow

WHEN the forces of a nation are mobilized to combat the enemy, the physician, like any other citizen, responds to the call and takes his place in the ranks of those who are ready to sacrifice their lives. As this sacrifice is offered and as every muscle becomes tense in the battle for victory and for ultimate peace, the role of the physician is singularly different from that of any other individual under his respective national flag. The soldier is there to overpower the enemy; whatever his ultimate and lofty objective, his immediate task and relentless goal is to destroy the enemy. The man at the lathe works hard making planes and guns and tanks to bring about victory and peace, but his major and immediate task is to make bombs that explode and destroy well, guns that shoot and kill well, tanks that rip through the enemy's ranks and roll over their tents and trenches and resisting machinery and bodies.

It is one of the greatest tragedies of mankind that from time to time we are forced to abandon our peaceful aspirations for tools of combat and destruction. If it is true that at the beginning there was the Word, the word itself becomes propaganda, a tool for hatred and for destruction of the enemy. All this is inevitable, relentless, unavoidable; the peremptory hand of history must guide us through a period of animosity and destruction of human life and many human values. This spirit of destruction engulfs not only the soldier, the factory worker, the public leader, but even the minister of the Gospel. He too—as a man, as a spiritual guide, and as a citizen—wants victory, and he must join us in our efforts to win the battle. He may pray for the salvation of the souls of all the fallen—our own and the enemy alike—but while walking among the living he staunchly gives spiritual comfort only to those who are fighting the enemy. He too must wish the complete destruction of the latter, as we all do.

The physician as a loyal citizen is naturally no different, but his task, his actual work, is totally different. Even in the midst of battle, of the most frightful destruction of human lives, his war effort as a citizen and soldier goes hand in hand with an unremitting effort to save human life. As a physician, not only does he not shoot, but he draws no line between enemy and friend. He would clean and close the wound of a prisoner from the enemy ranks with the same care and earnestness as he would that of one of our own soldiers. He truly ministers to the enemy even as a brother.

This aspect of the physician's role is more than a mere sentimental, humanitarian interlude in the midst of the horrors of war; it is more than a self-serving guirland of humanistic distinction amidst universal hatred. It is a mark of profound cultural importance. For in the wake of all wars, throughout the history of mankind, there is a period of hatred and distrust among men; our cultural values cannot help but be subject to considerable trials and partial deterioration. In war man learns to sacrifice

heroically his own life, but he does not easily learn to obliterate the distinction between enemy and friend for a long time after the guns are silenced and the battlefields cleared of débris. This global war, which has engulfed the world and invaded every home and hamlet, will more than any other war leave deep scars on our body cultural. When the signal of peace is sounded, we may be a very long time relearning the many values we had to unlearn before we could fight and win and hold the peace.

Among those who will have to unlearn the least, and who will therefore be better prepared to reteach, the physician will occupy the leading place. This he will do not by virtue of the fact that he is made of a different and saintlier fiber—for he is as weak and as human as any man—but by virtue of the very nature of his work. The philosopher will be less prepared for the task of restoration of human values, because the philosopher is only as strong as the wave of history that carries him. Nor will the scientist, valuable as he is, be better prepared, for the scientist in this total war will have been a combatant as much as any other man. The physicist or the chemist will have used his art and skill and knowledge exclusively in the service of actual destruction; he will have learned and taught the use of the "death ray" or of a new, more effective explosive. It will take him time before he shakes off the orientation imposed upon him by the exigencies of war.

The physician alone will have had the experience of constantly focusing his attention and bending his efforts on saving the lives of friend and enemy alike. In this total war in which no one is spared and no one may be permitted to deviate from the path of ultimate and total victory, the physician is apparently called upon to play a more important cultural role than ever before. The very task with which he is charged makes him the true organic carrier of some of the major cultural values which are scorched and wounded and fractured in the course of battle.

The physician's role looms large and his task immense; one wonders whether his public role in times to come will not be greater than that of any other profession. The engineer and the architect will be needed to be sure—but these will appear, for humanity recovers most rapidly in the material aspects of its life. The artist will be needed to be sure—but he will be born soon, because humanity emerges quickly from the darkness of the tortures which history imposes upon it, and it rises readily to dream and to play with its own imagination. But a far greater need, that of restoring the value of human life, individual and communal, is more difficult to supply in a post-war world. This task is medical in spirit and in practice, inalienable from the doctor in war as well as in peace. It is a task the responsibility for which is imposed on the physician by the very tragedy of human life. To this honorable responsibility he can only pay respectful obeisance. It need not be enhanced, it cannot be avoided.

GREGORY ZILBOORG, M.D.*

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HOW WE HAVE TREATED GRAVES' DISEASE DURING A QUARTER CENTURY*

J. H. MEANS, M.D.,
Boston, Massachusetts.

The good physician treats his patients by whatever method he thinks most likely to cure them. The wise physician, by observing the effect of the treatment which he gives in one case, tries to improve his treatment in the next. Without claiming to be either good or wise, I may say that in our treatment of Graves' disease in the Thyroid Clinic of the Massachusetts General Hospital, during the more than twenty-five years of its existence, we have always pursued this twofold objective. Thus we have from time to time changed our methods, and we look forward to continuing so to do in the future. Since the record of how we have actually treated our patients reflects our opinion on how we think they ought to be treated, I am going to use this record today as an index of the evolution of therapeutic theory in this field during the period mentioned.

When I was a medical student I was taught that iodine was absolutely contraindicated in thyrotoxicosis, this despite the fact that Trousseau[1] as early as 1863 had shown that it might be highly beneficial. The belief, widespread at the beginning of the present century that iodine is injurious in Graves' disease, sprang from the teaching of Theodore Kocher,[2] of Bern, who originated the term Iod Basedow, or iodine induced toxic goiter. In the notes which I took in 1910 on Dr. H. A. Christian's lectures on the Theory and Practice of Physic, I find the following:

"*Treatment.* Practically powerless to decrease secretion of gland except surgically. Keep in hospital under medical care for some time before operation. Cytolytic sera—also milk of thyroidectomized goats. Drugs—sedatives, bromide, rest in bed." No mention of iodine.

Austin Flint, writing in 1867,[3] before Kocher, and just after Trousseau, had this to say of treatment:

"The indications for treatment relate to the functional disorder of the heart together with the morbid state of the nervous system and the co-existing anaemia. Sedatives, remedies which tranquilize the action of the heart, without producing depression or interfering with the appetite and digestion, are indicated. For this end, hydrocyanic acid, aconite, belladonna, and digitalis may be employed. The anaemia calls for tonic remedies and especially ferruginous tonics. Trousseau is of the opinion that the latter are not useful, but most writers agree as regards their utility, and they have seemed to be beneficial in the few cases which I have observed. Iodine, with reference to the affection of the thyroid body, is of doubtful utility. Hygienic measures are probably of greater importance than remedies. Freedom from mental depression is to be secured as far as possible, and, whenever practicable, change of scene and other means of mental recreation are advisable. The diet should be nutritious, and outdoor life is desirable. Trousseau advocates the employment of cold water after the hydropathic method."

The item that intrigues me most in this statement is the mention of hydrocyanic acid, because recently we have observed the production of hypothyroidism by sulphocyanate in man.

During the quarter century after Flint, little if any progress was made either in the understanding of, or in the treatment of, Graves' disease. At least such would be my deduction from the following passage from the first edition of Osler's Textbook published in 1892:

"Medicinal measures are notoriously uncertain. The combination of digitalis and iron may be tried, and, when there is anaemia, often does good. . . . Ergot is warmly recommended by some writers. Belladonna gives relief occasionally, and should be administered until the dryness of the throat is obtained. No measures are so successful as rest in bed with an ice-bag or Leiter's tube applied occasionally over the heart, or, what is sometimes more agreeable, over the lower part of the neck and manubrium sterni. I have known the pulse to be reduced in this way from 140 to 90. Electricity has been much lauded and instances of cure have been reported. In many cases temporary improvement certainly follows the use of the galvanic current, the cathode being placed at the back of the neck and the anode along the course of the sympathetic or over the heart. Treatment of the thyroid gland itself is rarely successful, and the operative measures have

*From the Thyroid Clinic of the Massachusetts General Hosiptal.

Read at a meeting of the Richmond Academy of Medicine, Richmond, Va., April 14, 1942.

not been very satisfactory. Ligation of the arteries of the thyroid has been tried."

Another quarter century takes us to the time when our Thyroid Clinic was getting under way. In the 8th Edition of Osler, published in 1916, we find the following on treatment:

"(a) The disease is serious enough to warrant strong measures systematically carried out; much valuable time is lost in trying various remedies. The patient should be in bed, at absolute rest, and see very few persons. To quiet the heart's action the ice-bag may be continuously applied through the day, and veratrum viride, aconite, or strophanthin given in full doses. Ergot, belladonna, phosphate of soda, small doses of opium, and many other remedies are recommended, and in some instances I have seen benefit from the belladonna and the phosphate of soda. Electricity may be helpful."

"(b) *Serum Therapy.*—Two methods are employed: feeding with the milk of dethyroidized goats, introduced by Lanz, which is obtainable as a substance called rodagen. Good results have been reported by Mackenzie and others. Beebe, on the other hand, uses the serum of animals into which human thyroid extract has been injected. Excellent results have been obtained, but the method has the danger associated with the use of foreign sera."

"(c) *Surgical Treatment.*—Removal of part of the thyroid gland offers the best hope of permanent cure. It is remarkable with what rapidity all the symptoms may disappear after partial thyroidectomy. A second operation may be necessary in severe cases. The results obtained by the brothers Mayo and by Kocher give a remarkable percentage of recoveries. The operation under cocaine may be done with safety when the condition of the heart and the extreme tachycardia do not contraindicate it. Tying of the arteries and exothyropexia are recommended. Excision of the superior cervical ganglia of the sympathetic has one beneficial result, viz., the production of slight ptosis, which obviates the staring character of the exophthalmos."

"Marked benefit has followed the use of the X-rays in a few cases."

Such, then, was the general state of knowledge on the treatment of Graves' disease when I first became seriously interested in this malady. It was obviously one of some confusion. Whether the treatment given was medical or surgical depended largely on who got the case first—the physician or the surgeon. The physician took the attitude that the operative mortality was terrible, the surgeons that medical treatment was useless. There was some reason in each attitude. As a compromise, x-ray treatment was just emerging. I haven't been able to determine beyond doubt who was the first to use x-ray in the treatment of goiter. The paper of Beck,[4] 1900, in which some observations on cases of non-toxic goiter were reported, is the earliest I have found. In 1902, F. H. Williams,[5] of Boston, reported some amazing results in the treatment of exophthalmic goiter by x-ray. Pusey[6] also was among the pioneers in the irradiation treatment of toxic goiter. In 1905 several papers appeared, among others those of Stegmann[7] and of Görl.[8] The latter stated that the Röntgen ray has a definite action on the thyroid. In the same year Abbé[9] reported a case of exophthalmic goiter in which radium had apparently been of value. In 1907, C. H. Mayo[10] said, "We also make use of the roentgen ray. From its known action on the lymphatics and the glands it exerts a favorable effect on the over-activity of the thyroid in exophthalmic goiter, . . . while its effects may not be permanent, it is a valuable adjunct in preparing advanced cases for surgical procedure."

Seymour introduced x-ray treatment for Graves' disease at the Massachusetts General Hospital in 1915 and published a brief report in 1916.[11] He was rather enthusiastic, probably too enthusiastic, about the results, but none the less his comments are interesting. "Of the eighty cases," he states "eight were absolutely cured of their symptoms. Nearly all have gained weight. The average gain has been seven pounds, one case having gained twenty-five pounds. The pulse rate has been lowered in all but a few cases, the average being twelve beats. The greatest lowering in pulse rate was 52 beats, from 146 to 94. In this patient, the symptoms were very severe, with marked exophthalmos and tremor, and a moderately enlarged tumor of the gland. She had five treatments. The tremor has disappeared, the exophthalmos has practically gone, the circumference of the neck decreased one-half inch, and she feels perfectly well."

Surgery of the thyroid goes back to Billroth in the sixties, but it was really by Kocher in the eighties and in this country Halsted in the nineties that it was brought to a point of practical usefulness.

When I began my studies of thyroid diseases Dr. C. A. Porter, a leading surgeon of Boston in those

days, was the chief exponent of thyroid surgery. He had studied under Kocher. His contemporary, Dr. J. M. Jackson, on the other hand, was a vigorous proponent of medical treatment for Graves' disease. Dr. Jackson was a firm believer in a drug not mentioned by Osler, namely, the neutral hydrobromide of quinine, which had been introduced by Forchheimer,[12] of Cincinnati. According to Jackson and Mead[13] in 1908, under this drug there was striking improvement, manifested by slowing of pulse, decrease in sweating and tremor, and diminution in the size of the goiter. On omitting the drug the symptoms promptly recurred. In conclusion these authors remarked:

"We cannot advocate sending early cases to the surgeon. The results of medical treatment are too favorable, from 70 per cent to 80 per cent of the cases being cured by it. . . . But notwithstanding the good results from medical treatment there will always remain a certain number of cases for the surgeon, viz., when the thyroid gland becomes so large that it produces symptoms of compression or when the patient becomes rapidly worse on medical treatment. Organic heart changes and bad general condition are surely contraindications to operation."

Two years later (1910) the surgeon, Porter,[14] after making the indisputable point that some patients are greatly benefited by operation, asked:

"How shall the physician decide which cases are to be treated medically and which subjected to operation? In this borderland disease," he continues, "close cooperation between the physician and surgeon is necessary to accomplish the best results. Medical treatment should always be tried first, its duration to depend upon the degree of improvement and upon the circumstances of the patient as regards ability to rest. In the poorer classes, operation, in spite of its dangers," (the operative mortality was from 3 per cent to 9 per cent in those days, or higher) "should be done earlier, as it offers hope of quicker improvement."

Dr. Jackson discussed this paper of Dr. Porter's in a very openminded way. Among other things he remarked: "I feel that the combined effort of surgical and medical men is nowhere so important as in these cases of exophthalmic goiter. It is not a medical disease nor a surgical disease, but a combined disease. I think the sooner we get together on it and work this out, the better statistics we shall have." It was in this spirit that we started our Thyroid Clinic, and so it has been ever since a joint medico-chirurgical enterprise.

The first important problem we set ourselves was to determine, accurately if possible, the relative merits of x-ray treatment to the thyroid and surgical removal. We followed the patients who were admitted first to the medical services on x-ray, and compared the results with those obtained on the surgical services, where rather prompt operation was the customary procedure.

From the beginning we made use of metabolic rate determinations as a yardstick of thyroid function, much as one would use the temperature in following a fever. Our first BMRs on adults at the Massachusetts General Hospital were made in 1913 with an old-style Benedict "Universal Respiration Apparatus". The chief points we have stressed about the use of the BMR in the study of patients with thyroid disease is that it should invariably be paralleled by careful clinical observation, and, when available, by other laboratory tests. The evaluation of clinical status should be based on no single fact, but should be carefully sublimated from all.

Our early studies of the x-ray treated cases convinced us that in many cases this is an effective form of treatment, and because it carried no mortality in contrast to a relatively high operative mortality in those days, we soon came to the conclusion that the best program for Graves' disease was a trial with x-ray, and operation only in those cases in which there was not satisfactory improvement. The results were that approximately a third of the cases seemed cured, another third benefited, and the remaining third not benefited. These latter came to operation.

In Fig. 1 I have shown how we have treated our cases from the year 1915 through 1940, inclusive, divided into periods of either four or five years. The cases shown for anyone of these periods will number about four or five hundred. The data is given in terms of the percentage receiving any of the several types of treatment, and, as said earlier, reflects our conviction of how, for any given date, the patients ought to be treated.

In the first period, it will be observed, 39.5 per cent of the patients received only x-ray treatment, while the remainder either had operations after x-ray had failed, or received surgical treatment with-

out any preliminary irradiation; 19 per cent of the former, 41.5 per cent of the latter.

In the second period our confidence in x-ray led us to treat 51 per cent by that form of treatment alone, while 15.5 per cent had operation after x-ray had failed, and 32 per cent had operation forthwith.

The year 1923 was a signal one. In that year it was that Henry S. Plummer[15] taught the profession that iodine was not only not harmful in Graves' disease, but that to fail to use it in every case would amount to gross negligence. Like Morton's discovery of ether, it wasn't the first discovery, but it was the one from which the world learned the truth. 1923, therefore, marks the beginning of a new era in the treatment of Graves' disease. It separates the pre-iodine from the iodine era.

The effect of Plummer's discovery is plainly evident in Fig. 1. In the period immediately following there is a sharp decline in x-ray treated cases, and a sharp rise in one stage subtotal thyroidectomies (to 61 per cent). In the second iodine period subtotals ran to 86 per cent, and in the third to 90.5 per cent. Then they took a tumble, but to that I will come a little later.

It is of interest that the curve for multiple stage operation on the thyroid in toxic goiter has shown an almost progressive decline in our clinic. Starting off at 32 per cent in the first pre-iodine period, it dropped in the second to 22 per cent, and after iodine flattened out at not over 7 per cent. This is at variance with the practice in some well-known surgical clinics where multiple stage operations are still popular, but Dr. Samuel F. Haines, of the Mayo Clinic, who visited our Clinic recently, said it was very like the policy which has been followed in Rochester.

In the pre-iodine era Richardson and I[16] demonstrated that, whereas subtotal thyroidectomy usually

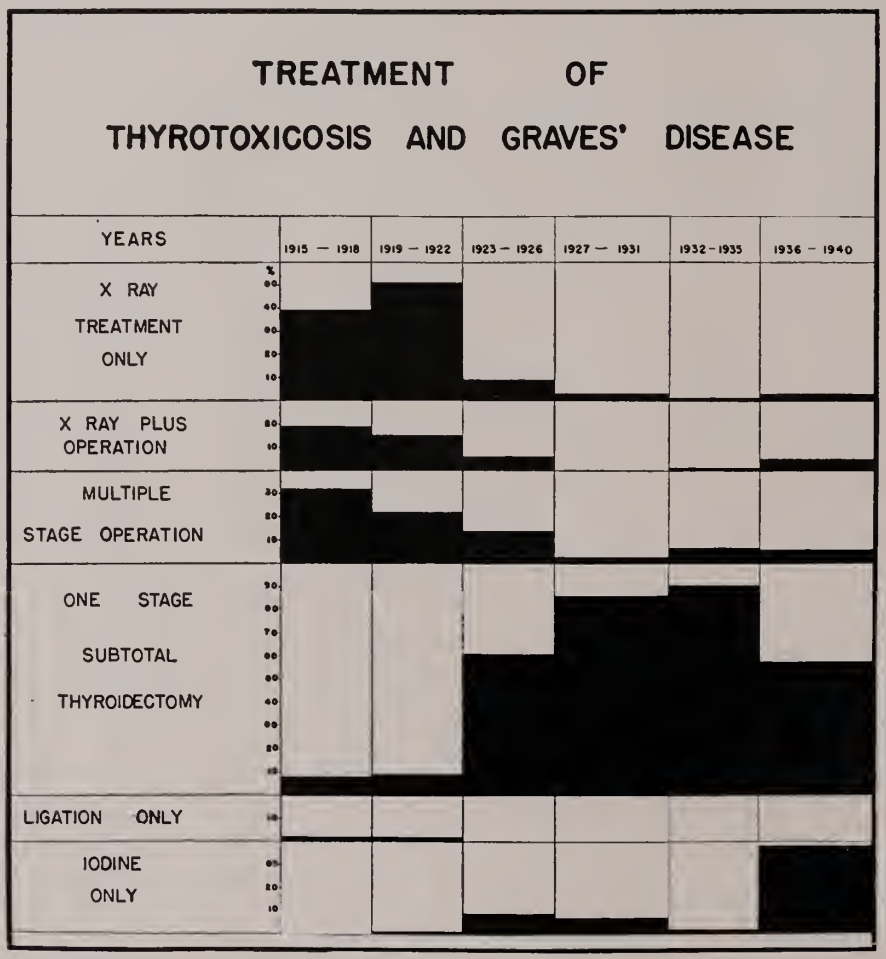

Fig. 1.

dropped the BMR, promptly and lastingly, to within normal levels, hemithyroidectomy dropped it only part way, after which in a year or so it might gradually fall to a normal level. In other words, subtotal removal did a better and prompter job, and was to be preferred unless too dangerous. It was because of the danger of one stage subtotals in those days that the multiple stage removal was sometimes employed.

When iodine came in we had two trains of thought: first, that it might be a definitive form of treatment of itself, or, second, failing that, it might be a splendid preparation for operation. Our early experience led us to believe (we have since changed our opinion to some degree) that it was not an adequate treatment *per se*, but that it did greatly reduce the risk of operation, largely by preventing postoperative toxic crises.

It is for these reasons that one stage subtotals bounded up in the first three iodine periods, and that x-ray approached the vanishing point. Our opinion of x-ray treatment had not declined, but because of the reduction in risk which iodine had brought about, subtotal thyroidectomy after complete iodinization became the method of choice, and was used in nearly every case. Pre-operative iodine was used, and still is used, in every thyrotoxic case of Graves' disease that came to operation.

From 1923, then, through 1935, we were strongly of the opinion that subtotal thyroidectomy in the thoroughly iodinized patient, was the method of choice in the treatment of all forms of Graves' disease or thyrotoxicosis. Since 1935, however, our views have become modified considerably. These modifications were in part the result of the acquisition of new facts, and in part of new interpretations of old ones.

For one thing the value of iodine alone as a definitive form of treatment was re-explored. Largely as the result of the observations and work of Hertz[17] it was found that, contrary to our belief of 1923, iodine alone *is* an adequate form of therapy in certain cases of Graves' disease. The problem is one of proper selection, and this Hertz discovered how to do. In our earlier trials with iodine alone we had selected cases largely on the basis of their apparent mildness, but when we had observed exacerbation of severe sort while a patient was still receiving iodine, we came to the conclusion that iodine alone was probably not adequate in any. Time proved that this was too sweeping a conclusion.

It is to be recalled that the natural course of Graves' disease is variable. In some cases the thyrotoxicosis subsides completely spontaneously. It may spontaneously give way to a phase of actual hypothyroidism. We have collected over a period of years data on the quantitative aspects of the iodine response in Graves' disease from all pre-iodine metabolic levels. From them we have devised certain average curves of what may be called standard metabolic response. Comparing individual responses with the standards, Hertz found that certain patients made what may be called a superstandard response. That is to say, their BMR fell more, during iodinization, than would be expected from the standard. Hertz further discovered that the patients who made such superstandard responses to iodine were those in which the disease was tending naturally to recede, to be approaching spontaneous recovery, and, furthermore, that such patients if kept continuously on iodine were unlikely to show any return of thyrotoxicosis, and that finally iodine could be stopped altogether without any ensuing relapse. Here, then, was a criterion for choosing patients for treatment by iodine alone, namely, superstandard iodine response. Patients who make such a response are approaching spontaneous recovery, and holding their symptoms in check with iodine until recovery occurs is all the treatment they need. This was the argument, and subsequent experience indicates that it has a high degree of validity. The rise in cases in which iodine alone was used, from 2 per cent to 38 per cent for the years 1936 through 1940, and the fall in subtotal thyroidectomy is then in large measure acccounted for.

Up to this point we had been thinking in terms of the thyroid and the effect of irradiation, ablation, or iodine administration upon its morbid performance. Since 1937, or possibly earlier, we have been gradually enlarging our conception of pathogenesis, and broadening our approach to therapeutics. The hormonic pattern extended to include the pituitary and its thyrotropic hormone. Other agents than iodine, which profoundly alter thyroid function immerged—thyrotropic hormone,[18] thyroid hormone[19] itself, cyanides and sulphocyanates,[20] and most recently, sulfonamides.[21, 22] At the same time other measuring sticks than BMR came to hand; blood iodine determinations, thyrotropic hormone estimations in blood and urine,[23] the effect of patient's

serum on animal thyroid and other tissues, tracer studies of the metabolism of iodine and other elements, by means of artificially radio-active isotopes.[24] Under these circumstances the whole problem of Graves' disease, its pathogenesis and treatment, was laid wide open, and the figures which are given in Table I for the year 1941 reflect some radical changes in our opinion of the management of this disease.

First, I may mention our separation of Graves' disease into two types, with certain striking differences in hormonic pattern, and we believe presenting some important differences in indications for treatment. I refer to what may be called the classic type, and what we have called the special ophthalmopathic type.[25] In the former, thyrotoxicosis and eye signs vary pretty much in parallel. In the latter, thyrotoxicosis is often slight, or even absent. The ophthalmopathy, on the other hand, is severe, and tends to become aggravated with a diminishing degree of thyroid activity. One may see progressive ophthalmopathy when the patient is frankly hypothyroid. The metabolism of patients falling in this category often drops to minus levels on iodine, and it is very seldom that these patients have a thyrotoxicosis sufficiently severe as to demand immediate relief *per se*. On the other hand, our experience indicates that thyroidectomy is contraindicated in these cases. It is not necessary for thyrotoxicosis, which, if present, can be easily controlled by iodine, and it may be followed by a marked aggravation of the ophthalmopathy. Precisely why thyroidectomy makes the eye condition in these patients worse is not known. It probably is dependent on various factors, of which lowered metabolic rate and consequent tendency to store water is one. Weakness and swelling of orbital muscles coincident with increased intraorbital pressure also undoubtedly are factors. An excessive secretion of thyrotropic hormone, which is a water-storing hormone, may be an important element. At least it can be said that in the special ophthalmopathic cases this hormone can be demonstrated in the urine, whereas this cannot be done in the classical variety.

In Table I, giving the data for the year 1941,* I have placed those cases classified as of the special ophthalmopathic type in a group by themselves, because we now consider that they present a separate, or special, therapeutic problem. Treatment is directed chiefly at the safeguarding of the eyes, and the major indication is to refrain from doing thyroidectomy. There were 10 cases in 1941 in which such a policy was followed.

Examination of the data for 1941 shows some other innovations. Thus there were 8 cases treated by radio-active iodine. This form of treatment was invented by Hertz in 1938. The theory back of it

TABLE I
TREATMENT OF THYROTOXICOSIS AND GRAVES' DISEASE DURING 1941

METHOD OF TREATMENT	NO. OF CASES
X-ray only	5
X-ray and operation	3
Multiple stage operation	2
One stage subtotal thyroidectomy	45
Iodine only	25
Radio iodine	8
Special ophthalmopathic	10

is that, since the thyroid selectively collects iodine by means of radio-active iodine, an irradiation effect can be planted directly in the cells that it is desired to irradiate, and might be expected to be more efficacious than x-ray given from outside. To date the results are at least encouraging.

Treatment by x-ray alone and x-ray plus operation showed no significant change in 1941 from previous years. Multiple stage operations fell to a new low of 2, and one-stage subtotal thyroidectomies fell from 58 in the preceding period to 45. Iodine alone remained about the same.

The narrative of our therapeutic policy is thus brought up to the date of writing (April, 1942). With regard to surgery, we have come full circle. In the period 1919-1922, the last before iodine, we treated approximately 50 per cent of cases by surgery, and 50 per cent by methods which did not include surgery. In the third period of the iodine era 98 per cent of the cases had thyroidectomies. Now in 1941 we are back to a 50-50 ratio for programs including operation and those without operation.

The reason for these changes in opinion is, of course, that the ideal treatment has not been found, and that we are still searching for it. Although in many cases of Graves' disease subtotal thyroidectomy gives remarkably good results, it is by no means perfect treatment. It is my own belief that ultimately there will be found a method of restoring

*Since there is a total of 98 cases in this table, the figures can be taken as per cent, and compared directly with earlier periods in Fig. 1.

hormonic balance to normal status which does not require resection of thyroid tissue. Nor do I believe the ultimate treatment will be by irradiation of any sort. It is more likely to make use of hormones, antihormones, or chemical agents which alter the activity of the thyroid gland, or of the sensitivity of the endorgans of its hormone. At least such is my prediction.

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REPORT OF AN EPIDEMIC OF AN ACUTE RESPIRATORY INFECTION WITH PNEUMONITIS*

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During the past six years there have been numerous reports of acute respiratory infections resembling in many ways influenza but presenting atypical areas of pulmonary consolidation, discovered largely by x-ray examination. These cases have occurred both sporadically and in epidemics.

The first report by Bowen[1] in 1935 included eighty-nine cases of "pneumonitis" which he considered a complication of influenza. There were few physical signs except rales and the diagnosis was made by x-ray appearance of spotty infiltration in the lungs. Other characteristics were cough, negative sputum, low leucocyte counts, and the mild nature of the disease.

In 1936 Allen[2] reported sixty-eight cases of acute pneumonitis, which he considered a virus disease, producing an atypical broncho-pneumonia. The symptoms were those of an acute respiratory infection without the ordinary ear-marks of pneumonia such as chill, sharp pain in the chest, rusty sputum, cyanosis, and leucocytosis. The disease was mild and the cases all recovered.

"The roentgen appearance is that of a confluent mottled fan or rounded area usually of homogenous, moderate density in the central portion, with the borders fading into the normal lung. It has the appearance of an exudative alveolar infiltration and is usually more localized and of more even density than the bronchopneumonias of childhood or than those which complicate adult diseases". The involvement was of one or both lower lobes in ninety-two per cent of the cases.

In 1938 Reimann[3] reported eight cases of an unusual and severe infection of the respiratory tract from which he was unable to recover the virus of influenza but which he believed to be caused by some other filtrable virus.

Outbreaks of mild epidemics have been reported from the University of Oregon, Oregon State College, Stanford University, Cornell, Harvard, Princeton, New York, the University of Minnesota, and other places.

Another report by Reimann and Havens,[4] in 1940, of four hundred and seven patients divides the cases into mild and moderately severe or severe forms. They thought the disease was due to an unknown virus infection and regarded the mild cases involving the upper respiratory tract as well as the severe cases with lung involvement, as differing only in degree of extension of the process.

The mild cases were mostly ambulatory with symptoms of "colds" and comprised seventy-five per cent of the series.

The severe cases had an insidious onset with headache, sore throat, coryza, malaise, muscular pains, cough, and shivering. Over seventy per cent had a persistent hacking cough with very little sputum. Common symptoms of pulmonary invasion were hoarseness, drenching sweats, weakness, slight cyanosis, and dyspnea. Fever lasted 2.5 days in patients without involvement of the lungs, 4.6 days in those with tracheobronchitis, and 8.2 days in those with pneumonia. In only four patients without pneumonia were rales or suppressed breathing heard in the interscapular areas.

Longcope[5] reported thirty-two cases, some of which showed the characteristics of the mild form commonly found, but some of which were moderately severe or severe. Two deaths occurred.

Finally, Weir and Horsfall[6] succeeded in isolating the specific virus from cases of pneumonitis similar to those previously described. After failing to find animals in this country susceptible to the suspected virus, they transferred their research activities to Jamaica where mongooses were found to be suitable. The importation of mongooses to the United States is banned. Pneumonia lesions were produced in from sixty-two to one hundred per cent of the test animals in carefully controlled experiments. Cross neutralization tests showed that this virus differed from the virus of influenza and other viruses known to cause respiratory diseases. The authors concluded that this virus was the specific cause of acute pneumonitis.

*Read before the Virginia Section of the American College of Physicians at Lynchburg, March 4, 1942, and also before the Medical Association of the Valley of Virginia at Harrisonburg, May 25, 1942.

During October and November 1941 an epidemic of an acute respiratory infection was observed in a private preparatory school. Seventy-nine cases occurred in a student body of four hundred and fifty or an incidence of seventeen and five-tenths per cent. Many of the cases gave a history of having had a "cold" for a few days before admission to the school hospital. The majority, however, had a rather sudden onset with headache, muscular pains, chilly sensations and occasionally a chill, dizziness, general malaise, and varying respiratory symptoms such as cough, sore throat, and blocking of the nose. Several patients were admitted with the symptoms of diarrhea and abdominal pain, and a few had nausea. Drowsiness was common during the febrile stage. Sweating occurred, but not so profusely as described by other observers.

In this series there were fifty-three which ran a relatively short course, with a moderate temperature elevation, which had an average duration of four days. These differed in no way from the cases of mild influenza commonly seen.

There were two cases of pneumonia, one atypical bronchopneumonia, and one type twenty-seven lobar pneumonia with physical signs and laboratory findings consistent with the diagnosis of the pneumonias commonly seen. These patients responded promptly to sulfadiazine therapy.

The chief interest in this report lies in the other twenty-four cases constituting thirty per cent of the series. In these the onset was similar to the mild cases except the temperature range was higher and often reached its height after from two to five days. The cough was frequently distressing and the patients appeared more toxic. The temperature subsided by lysis and lasted for an average of ten days. The average period of hospitalization was fifteen and five-tenth days.

Daily examinations of the chest were negative until the temperature had fallen to an average of ninety-nine and four-tenths. At this time small and medium moist rales might be heard, usually over one or the other lower lobes of the lungs. In three instances the rales might be heard over both lower lobes, and in one case an upper lobe and both lower lobes were involved. Other physical signs were essentially negative, save for slight impairment of resonance over the affected areas in a few cases, and the presence of severe coughing. The sputum was scanty, tenacious and very difficult to get up. It was never rusty or blood streaked. There was no pleural pain and no friction rubs were heard. No cyanosis or dyspnea was noted. As a rule, within a day or two following the appearance of the rales, the temperature was normal. The rales gradually cleared up in a period of about a week and were absent in follow-up examinations after the patients were discharged from the hospital.

Aside from a few cases of mild otitis media, tonsillitis and sinusitis, there were no complications and all of the cases recovered.

The striking feature was the absence of any signs of lung involvement during the toxic stage, and the appearance of rales just as the temperature was approaching normal and the patients no longer appeared ill.

Blood counts were made upon five of these cases. The highest leucocyte count was ten thousand six hundred and the average count was seven thousand two hundred. Negative tuberculin tests were obtained upon two of the earlier cases.

X-ray examinations were made upon six cases and showed areas of infiltration extending out from the hilus regions, which were considered consistent with a diagnosis of pneumonitis or virus pneumonia.

Facilities were not available for virus studies and it was not practical to make routine X-rays, blood counts, cultures and typing of sputum, but the pattern presented by those cases studied in more detail was reproduced with remarkably little variation in the other cases.

Several of the earlier cases were given sulfonamides without any effect upon the temperature or lung signs.

The degree of weakness and prostration was not marked considering the duration of the illness, and no more pronounced than that often seen after complicated influenza. However, the patients were young and healthy and their convalescence was no doubt shortened by these factors.

SUMMARY

1. A brief review of the literature of a recently isolated virus infection of the respiratory tract has been given.

2. An epidemic with a thirty per cent involvement of the lungs, resembling this virus infection has been described.

COMMENT

This report has been made to further emphasize the increasing incidence of epidemic pneumonitis

and to subscribe to the view advanced by others that this pneumonitis is not a complication, but the end-result seen in many cases of this disease, and represents the spread of a pneumotopic virus infection into the bronchioles and alveoli. In the milder cases this infection is limited to the upper respiratory tract.

Evidence points to this disease as being highly contagious. While most outbreaks have been mild in character, a few have been quite severe, and, as the disease spreads, it may increase in virulence. Strict isolation of these patients should be carried out.

The absence of physical signs of lung involvement during the febrile stage is of interest. It is suggested that the tenacious exudate is so scanty that it fails to fill the alveoli during the earlier stages and, therefore, physical signs are absent. As resolution sets in and the exudate is softened and partially detached from the alveoli, the moist rales which we associate with a resolving pneumonia make their appearance.

CONCLUSIONS

An acute respiratory infection with a high percentage of lung involvement has been considered as belonging to the class of infections due to a pneumotopic virus, recently described by Weir and Horsfall.

This conclusion has been based on the similarity of these cases to various epidemics described in the literature in the past few years, but cannot be substantiated in the absence of routine bacteriological study, X-ray examinations, and virus identification.

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THE HORMONAL TREATMENT OF PROSTATIC HYPERTROPHY AND CANCER: A REVIEW AND INITIAL CLINICAL EXPERIENCES*

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If one were called upon to characterize the present era of medicine in its developmental aspects, unhesitatingly it would be called the biochemical era. No field has developed more under this biochemical influence than that of endocrinology.

I wish to outline some newer phases of a somewhat ingenious approach to the problem of prostatism, both benign and malignant. This approach from the endocrinologic standpoint in its intriguing intricacies absorbs the thought of the urologic world at the present time.

During the past decade we have seen revolutionary changes in the treatment of prostatic hypertrophy by electro-surgical transurethral resection. Yet the same period has given birth to a newer physiologic concept which regards the prostate as a member of an intimately related endocrine system.

Clark has in a masterly review of the subject outlined in chronologic sequence the events leading to our present knowledge of the influence of endocrine hormones on the prostate. According to this author, from whose work we shall quote frequently in succeeding paragraphs, the endocrine treatment of prostatic hypertrophy began in 1893 when White castrated 111 men suffering from prostatic hypertrophy and obtained relief of symptoms in 87 per cent of the cases. Cabot later confirmed these observations, but castration for obvious reasons became unpopular and was discarded.

Hoskins in 1911 developed the concept that the gonadotropic activity of the pituitary, then vaguely understood, was normally held in check by the

*Presidential address delivered before the Virginia Urological Society meeting at the University of Virginia, March 5, 1942.

gonads. Smith and Engle next showed that hypophysectomy caused atrophy of the prostate. Later, in 1934, Walsh, Cuyler and McCullagh found that such post-hypophysectomy prostatic atrophy could be prevented by the parenteral administration of male sex hormone.

We may note in passing that androsterone was identified as the male sex hormone by Butenandt in 1931. Rusicka synthesized androsterone in 1933. Returning to the pituitary, it was found that the anterior-pituitary-like principle of pregnancy urine would produce prostatic hypertrophy in castrated male rats, if injected parenterally. Lower, Johnson, Zondek and others confirmed this activity of anterior-pituitary-like hormones by injecting it into monkeys with consequent prostatic enlargement.

With the isolation of androsterone and the finding that diminution of virility, of sex vigor and the occurrence of prostatic hypertrophy in later life appeared concomitantly with a diminution of androsterone as determined by biologic and biochemical assays, it was assumed that all of these phenomena were due to the decrease of the male sex hormone in the senescent period.

Now, Lower, McCullagh and their associates at the Cleveland Clinic from experimental evidence developed the hypothesis that there are two major testicular hormones. One, called inhibin, is developed by the tubules or germinal cells. It has the function of inhibiting or controlling the gonadotropic activity of the pituitary gland. It is this hormone, "inhibin", which prevents the pituitary from overstimulation of the interstitial cells of the prostate.

A second testicular hormone, androitin, is produced by the interstitial cells of the prostate. It is closely related to, if not identical with, androsterone, and acts as a sex stimulant and tends to produce prostatic hypertrophy. In short, the pituitary can stimulate the testis to produce sufficient androitin to cause prostatic hypertrophy, unless there is sufficient inhibin present to hold the pituitary in check.

Notwithstanding this physiologic evidence to the contrary, the use of androsterone in the clinical treatment of prostatic hypertrophy was tried largely on an empirical basis, or even, judging from what has just been said, on an irrational basis. Indeed, this form of therapy became widespread and an abundant amount of literature reporting remarkable clinical successes was published. It was claimed that the patients improved subjectively and that prostatism was to some extent relieved. However, no carefully controlled cases have been established showing atrophy of the prostate. Its size and histologic features remained the same. Nevertheless, even at the present day, male sex hormone is advocated and is being widely used in prostatic hypertrophy, lack of libido and in the sex neuroses of the so-called "male climateric". Indeed, if one were to believe some of the articles in scientific and lay literature, and especially those presented in brochures put in our hands by manufacturers, the fountain of youth lies just ahead. Yet scientifically controlled series of cases in the hands of conservative observers sharply controvert this action of the male sex hormone and even go to show that its indiscriminate use may actually cause progression of the disease it is supposed to cure.

Kearns notes that testosterone has a salutary effect on muscle tone and creatinine balance. He feels that it is possible that the changes proven in increasing the power of skeletal muscle may well be duplicated in the bladder detrusor musculature. This may explain the improved emptying power which patients with prostatism often experience after taking testosterone.

To return to our physiologic contributions, Zuckermann showed that male and estrogenic hormone are both elaborated in the male organism. He felt that they are balanced in such a ratio that the estrogenic powers of the female sex hormone are ordinarily inhibited. As senescence approaches this balance becomes disturbed and one hormone may be produced in excess of the other.

Wugmeister, in 1937, promulgated a similar thesis that the female hormone, always present in both male and female, diminishes in later life, leaving a relative excess of male hormone. The organism in both male and female tends towards "hypervirilixation". The anterior pituitary being no longer inhibited by estrin begins an over-stimulation of the testis to produce a relative excess of androsterone, and this stimulates the genital glandular apparatus to hypertrophy. In 16 of 23 cases of prostatic hypertrophy treated with estrin, improvement was noted in 9 of these. The hypertrophy was clearly reduced as evidenced by rectal and cystoscopic examination.

Huggins and his colleagues at the University of Chicago believe the action of estrin on the male genital complex to be:

1. Inhibition of the gonadotropic activity of the pituitary.

2. Depression or neutralization of the male hormone.

3. Depression of the germinal epithelium and interstitial cells of the testis.

4. Over-dosage produces desquamation of the prostatic epithelium.

5. Over-dosage produces carcinoma of the breast in male mice.

By male hormone administration these workers produced hypertrophy of the dog's prostate and subsequent reduction in the size of this prostatic hypertrophy by administering theelin or stilbestrol.

Again, with Stevens and Hodges, Huggins has investigated the effect of castration on prostatic cancer and hypertrophy. In 3 cases of benign hypertrophy subjected to castration, definite epithelial atrophy together with gross decrease in the size of the gland was revealed clinically and by biopsy specimens. They feel that while in old age male hormone is decreased in amount, enough remains to produce prostatic hypertrophy. However, if this residuum of hormone is eliminated by castration, the prostate will atrophy. Also by the injection of estrin without castration, the remaining male hormone is neutralized and atrophy similar to that produced by castration takes place.

In the clinical management of benign prostatic hypertrophy, Kahle and Maltry treating 14 patients with diethylstilbestrol found that symptoms were alleviated in 7 and in all but 3, who died of intercurrent disease, the prostate decreased in size, as noted by rectal and cystoscopic examination. Clark reports 7 patients treated with diethylstilbestrol with relief in 6 patients.

In dealing with advanced prostatic cancer, Huggins found castration to have a reasonable ameliorative effect. In this disease it was found that the serum phosphatase, which has a maximum activity at pH 5 (acid serum phosphatase), is increased especially in the presence of bony metastasis. Acid serum phosphatase is also increased in benign prostatic hypertrophy. Also, acid phosphatase was found increased in the cells of the primary prostatic lesion. Now after castration, the acid serum phosphatase was found to undergo a sharp and prompt reduction toward normal. The alkaline phosphatase (pH 9) at first rose and then returned to normal.

Clinically orchidectomy in patients with prostatic cancer is accompanied by gain in weight, disappearance of pain, rise in red cell count, increase in size of stream, and reduction of residual urine. Against these features are noted in some cases a pitting edema and swelling of the lower extremities, diminution or obliteration of sexual capacity and the appearance of hot flashes, the latter being relieved to some extent by stilbestrol. The results from the administration of estradiol dipropionate (diovocylin) or diethylstilbestrol are reported as similar to those obtained by castration, but are generally held to be not so marked.

Huggins reports that osteolysis from metastatic lesions was shown to undergo reparative changes after castration, with sclerosis and recalcification being noted in x-ray studies. Injection of androsterone in cases with prostatic cancer seemed to cause increase in pain. Huggins reported clinical improvement in 15 of 21 cases of prostatic cancer treated by castration. Herrold and Palmer reported improvements in 10 patients treated with estradiol dipropionate, while Herbst in 9 cases treated with this hormone found marked general improvement with reduction in nocturia, increased size of stream, relief of pain, and increase in appetite, strength, betterment of hematologic findings, and general retardation of the progress of the disease.

Munger has advocated castration by irradiation and reports results comparable with those obtained by castration and hormone therapy. Most observers at the present time, however, feel that surgical castration more completely removes the residuum of male hormone than does castration by irradiation.

Case Reports

My own experience with hormonal treatment of prostatic disease is recent and brief. It is now nine months since I began using this form of treatment in selected cases. At the outset we chose cases which were regarded as borderline with regard to the indication for prostatectomy, or those with certain complications which made prostatectomy by incisional operation, or by resection, highly hazardous.

Twenty-one patients with prostatic disease have been treated. Thirteen of these were patients with clinically benign hypertrophy, varying in symptoms from increased frequency, diminished stream and little residual, to six patients who had more or less

complete retention, and required frequent catheterization.

One patient, aged 61 years, with advanced carcinoma of the prostate and eight with prostatic inflammation have been treated with hormones, the latter receiving in addition massage and usual local measures.

Of the thirteen patients, aged 54 to 85 years, with benign hypertrophy, six had complete or almost complete retention. By use of an indwelling catheter and the daily administration of diethylstilbestrol,* 1 mg. by mouth and 1 mg. intramuscularly, two were able to empty their bladders freely, with little residual, with increased stream, and lessened nocturia in a period of two weeks. After three or more months with occasional courses of the drug by mouth, they are maintaining good vesical function. Four patients were regarded as poor surgical risks: one because of a fractured femur; another because of a fractured zygoma and cerebral arteriosclerosis; another because of paralysis agitans and extreme senility; and another, age 85 years, because of progressive myocardial failure. Each of these was subjected to suprapubic cystostomy for drainage, using an endoscopic technique which I described several years ago.

The first patient, a man of 72 years of age with a fractured femur, had his suprapubic drainage while being treated for his fracture. About two months later we began diethylstilbestrol by mouth and intramuscularly. A few weeks later he reported that he was voiding naturally and, upon removing his suprapubic catheter, the wound healed within a few days and has remained healed for six months. He has no residual at present, nocturia once to twice. He passes a good stream and symptoms of prostatism present for several years are almost entirely relieved.

The second patient, a man of 67 years, with a fractured zygoma, myocardial disease and cerebral symptoms associated with hypertension and arteriosclerosis, had diethylstilbestrol therapy started a few days after suprapubic cystostomy. After a period of five weeks he began voiding, discarded his suprapubic tube, and his wound healed. He is still troubled with nocturia, but makes a good stream and his residual urine is usually under 100 cc. His blood urea originally was 65 mg. per cent and is now about 35 mg. per cent. He has had no sharp return of his obstruction after 4 months.

The third patient, aged 85 years, with progressive myocardial failure, did not respond to indwelling catheter and stilbestrol treatment. A few days following cystostomy, he died of a cardiac death.

The fourth patient, a man of 77 years, with Parkinson's disease and almost total retention, was a city almshouse patient who had been in the hospital several times during the past year with treatment by indwelling catheter. He likewise failed to respond to stilbestrol and estradiol dipropionate treatment over a period of weeks. So a suprapubic cystostomy was done and the therapy continued. After several weeks of estrogenic therapy, he began to void small amounts. We were about to submit him to resection, but decided first to give testosterone treatment a trial. Ten to twenty-five mg. of Oreton (Schering)* were administered daily intramuscularly. Within a week he was voiding and we discarded the suprapubic tube. The wound healed immediately. His stream is fair, has no residual and voids two to three times nightly. We give him 1 mg. stilbestrol every two days and occasional doses of Oreton. I have no explanation for the role which testosterone may have had in this case, but report the fact.

Of the seven cases of benign hypertrophy with residual from zero to three or four ounces, but with nocturia and diminished stream, we will speak briefly. Six of them have received marked benefit and are emptying their bladders completely, with better stream and with nocturia less frequent. In addition to stilbestrol therapy, these patients have received massage, and in a few instances diathermy and sounds have been used. None of them at present are regarded as candidates for resection in the immediate future.

One case of prostatic cancer in a man of 61 years with a stony hard fixed mass obliterating the prostatic contour and extending to the region of the seminal vesicles was complicated by pleurisy and asthma. A catheter could be passed with the greatest difficulty and a residual of ten to twenty ounces existed. No metastasis to bone could be determined. He was given a therapeutic castration dose

*The diethylstilbestrol was provided by the Department of Medical Research, Winthrop Chemical Company, Inc. The testosterone (Oreton) was furnished by the Department of Medical Research, Schering Corporation. The estradiol dipropionate (Diovocylin) was furnished by the Department of Medical Research, Ciba Pharmaceutical Company.

of x-ray by Dr. C. D. Smith and concomitantly diethylstilbestrol was given. Within one month, in spite of severe attacks of asthma and pleurisy, he began to improve in general strength, his stream increased, the prostatic mass, as felt by rectum, began to soften, and his residual urine disappeared. After four months his urinary function is maintained and as yet the expected progress of his disease is being held in check.

In eight cases of non-specific prostatitis associated with pus and bacteria (usually green producing streptococci) in the expressed secretion, we have administered stilbestrol, in addition to massage, sounds, irrigations and heat. One milligram of stilbestrol has been given by injection once to twice weekly.

Some of these patients have had sharp improvement and have been relieved of dysuria, backache, and general lassitude, which in three instances at least had troubled them for several years. I cannot evaluate at this time the effect of hormone therapy in this type of patient, but I have the strong impression that it has been of some benefit and that it should be further investigated. The infection for the most part has been reduced to a small residuum, as determined by microscopic study and cultures of the prostatic secretion, but to be sure a residuum of infection does remain.

In commenting upon the general features of these somewhat too brief case reports, may I say that we have not done biopsies on any of these patients. This procedure, while of utmost scientific value, involves repetition perhaps several times and entails some hazard in the type of patient to whom hormone therapy has been applied. Steroid studies in blood and urine are most intricate, unstandardized at present and require biochemical techniques, which I have not had at my disposal. Likewise, while phosphatase determination in Bodansky units has been done, these were not carried out in their relation to the pH range, as advocated by Huggins, who uses the method of King and Armstrong. Thus our findings in this respect are not conclusive and give us no clinical information of value.

It is to be emphasized that there are certain hazards in the use of stilbestrol. In brief, they are nausea, dizziness, edema of the lower extremities, and an erythematous skin rash, possibly leading at times to exfoliative dermatitis. Loss of libido and oligospermia are the results of large doses, or prolonged administration of stilbestrol and estradiol dipropionate, and contraindicate the use of these drugs to any great extent in younger or vigorous mature men. For this reason, the administration of these drugs in prostatitis, especially in younger men, must be in small dosage and at infrequent periods, with careful watch of the sperm content of the seminal secretion. Painful swollen breasts frequently occur in patients receiving these hormones, and this is an almost constant finding, if the drug is continued in large dosage over a long period of time. In fact, Herbst and others regard this as indicating the therapeutic limit of the drugs, its discontinuance being advised when this feature becomes well developed. While no cases are on record of carcinoma in the breast or other organs having developed from prolonged use of sex hormones, from animal experiments the possibility of such a development must be admitted.

Most of our patients developed some of these symptoms. Nausea was frequent and dizziness occasional. Several complained of loss of libido and gynecomastia was noted at sometime as the general rule. This disappeared slowly after stopping the drug.

The dosage employed varies with different authors. Herbst advised 1 mg. three times weekly. Herrold gives daily dosage of as large as 5 mg. daily at the outset. Some prefer diovocylin (estradiol dipropionate) and find that it has a more positive effect than stilbestrol.

The use of testosterone, alternating with stilbestrol, has been mentioned as of possible value in one case. I find no reference to this in the literature, but there are hypothetical reasons why it might be of value in attempting polyhormonal treatment of an endocrine imbalance.

In conclusion, I have presented a review and a few experiences with a newer effort in treating prostatic disease. The evaluation of this effort must rest with further clinical experience and the application of biochemical factors yet to be determined and yet to be more clearly standardized. Surgery at present is still the method of choice for treating prostatic hypertrophy. Yet in borderline cases, with due care to toxicity of the drugs and their possible effect on the libido, I feel that a trial of hormone therapy may be justified. Likewise, in certain urologic derelicts with such concomitant disease as to make resection or prostatectomy hazardous, the hormone therapy may be tried with or without suprapubic cystostomy. If the patient's re-

sponse to such therapy is not immediately and reasonably favorable, surgery is indicated.

In dealing with non-operable prostatic cancer, reports from every urologist using this treatment have been more than encouraging and show that such a regimen will more often than not stay the progress of this disease to an extent at present indeterminate.

In short, we are seeing the basis for future development of hormone therapy being established. If and when the present conflicting concepts of endocrine physiology as applied to the prostate become more clearly crystallized, we may look forward to a method which promises a great deal in prophylaxis and therapy in managing certain more clearly defined types of vesical neck obstruction in later life.

Since writing this article a further patient, age 84 years, with total retention due to benign prostatic hypertrophy has been treated by suprapubic cytostomy followed by daily doses of 1 mg. stilbestrol and 12½ mg. testosterone three times weekly. After three weeks his suprapubic tube was discarded, his wound closed, and he is now after several weeks voiding freely with no residual. The combination of estrogenic and androgenic therapy needs further investigation.

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BENIGN BRONCHIAL ADENOMA: REPORT OF A PERIPHERAL LESION OF THE RIGHT MIDDLE LOBE, CURED BY PARTIAL LOBECTOMY*

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Benign bronchial adenomas fall into that class of tumors that present histological difficulties in establishing their benignity; that is to say, they frequently are "microscopically malignant" but

Fig. 1.—Anterior-posterior film of chest taken in 1937. Tumor located in lower portion of right chest.

in most instances are clinically benign. It is just such a growth that I would like to report.

Adenomas of the tracheo-bronchial tree, according to Wessler and Rabin,[1] who in 1932 reported a series of 17 cases, are usually in the form of pedunculated polyps and always originate from the mucous membrane of the trachea, right or left main stem bronchus, or one of the adjacent larger secondary bronchi. They further state that the growth is usually situated near the origin of the involved bronchus. This is also the opinion of Kramer and Som[2], Hamperl[3], Jackson,[4] and numerous other authors. In reviewing the writings of these and others, no report or reference to a growth arising in the peripheral or terminal bronchi could be found. On this basis, if for no other reason, this case merits consideration. The tumor unquestionably had its origin in a terminal bronchus and was situated immediately beneath the pleura of the right middle lobe.

A brief review of these tumors reveals them to present quite definite symptoms, both subjectively and objectively, occasionally even to the point of enabling one to make a diagnosis prior to bronchoscopic visualization. They occur as a rule in the third and fourth decades, over two-thirds of the reported cases falling in this age group. They have been reported, however, in patients as young as 13 years and as old as 64 years. Their point of origin has been the subject of much dispute, but the consensus of opinion at present is that they arise from the duct epithelium of the bronchial glands and are usually covered with a highly vascular bronchial mucosa. More fuel for the debated origin of these tumors can be added if it is assumed the tumor in question originated in a terminal bronchus or bronchiole, since Jordan[5] states that bronchi with diameters of 1 mm. and less do not possess mucous glands.

Bronchoscopically, a smooth, round or oval tumor, which is usually pedunculated and freely movable, but which may on occasion be sessile, is seen.

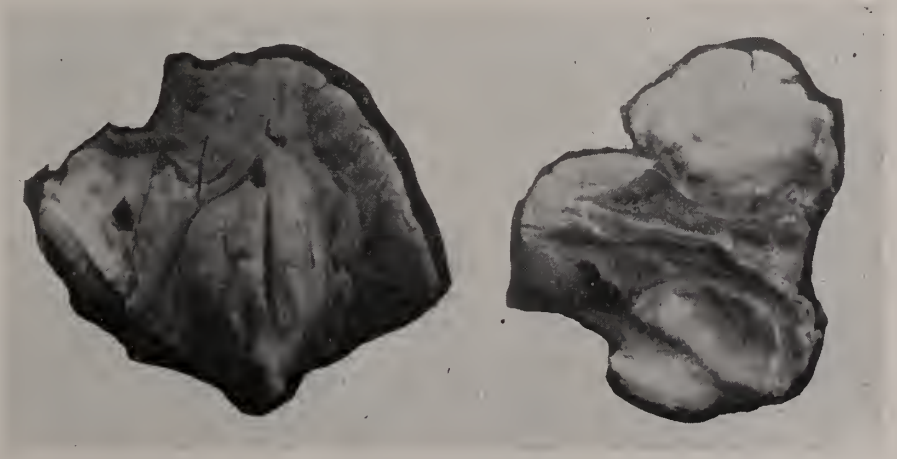
The clinical syndrome presented by these

*Read before the Seaboard Medical Society of Virginia and North Carolina at its meeting in Washington, N. C., December, 1940.

Figs. II & III.—Anterior-posterior and lateral films taken in 1939, showing the increase in size of the tumor.

adenomas are essentially those of any benign bronchial neoplasm. When the tumor is small or in the so-called non-obstructive phase, symptoms may be entirely absent, or the one cardinal symptom of hemoptysis may be present. Because of the location of the growth in the main bronchi the bleeding is characteristic in that it begins abruptly and terminates just as abruptly—with no prolonged periods of blood streaked sputum. Chest x-rays at this time will reveal neither the tumor nor evidence of parenchymal damage, and under these conditions, i. e., unexplained hemoptysis, and a negative chest film, bronchoscopy is definitely indicated, for it is by this means only that bronchial tumors can be diagnosed with any degree of certainty. Additional symptoms during this non-obstructive phase are caused by the tumor *per se*, and consist for the most part of an irritative cough and a respiratory wheeze. Bronchoscopic removal of the tumor at this time usually results in a complete cure.

With the continued growth of the tumor the obstructive phase is reached with its super-imposed atelectasis, recurrent bouts of pneumonia, pleurisy, and in time the inevitable termination of all bronchial tumors, suppurative bronchiectasis with chronic indurative pneumonitis. Relief of the obstruction



Figs. IV & V.—Gross specimen; showing mediastinal surface of the distal portion of the middle lobe and the contained tumor.

through bronchoscopic removal of the tumor, thus promoting drainage, will markedly improve the symptoms provided the damage to the distally obstructed lung has not progressed to the point of permanent damage to the pulmonary parenchyma. Complete relief from the resulting bronchiectatic sputum will usually necessitate the removal of the diseased lobe or lobes of the involved lung.

Fig. VI.—Photo-micrograph, low power: Showing circumscribed nature of the tumor with compression of adjacent lung tissue.

CASE REPORT

Mrs. J.B.H.; age 36; date 10/4/39.

Complaint: Pain in chest, general malaise and occasional hemoptysis.

History: The patient's present illness began during the winter of 1937. At this time she began to have blood streaked sputum, pain in her right chest and general malaise. An x-ray of her chest at this time revealed a localized, well circumscribed shadow in the right lower chest, the lesion measuring 1.5 cms. in diameter. The remainder of the lung fields were normal. No definite diagnosis was made at this time. Under conservative symptomatic treatment she improved somewhat, but was more or less confined to her home. Interval x-rays revealed the growth to be slowly increasing in size. In May, 1939, the patient had a moderately severe hemoptysis, with an increase in her chest pain. From this time until she was seen by me in October she had been a semi-invalid because of her general ill-feeling. When first seen, in addition to her original symptoms, the chest pain had increased and, in addition, she complained of substernal oppression and an annoying choking sensation. Except for the above subjective symptoms her general health was apparently good. There had been no blood streaking since the previous hemorrhage in May, and cough had never been present.

Past History: In 1933 a pelvic laparotomy had been done, the details of which were not available. In 1935 a D & C and sterilization with x-ray and radium had been done for excessive uterine bleeding. The pathological diagnosis at this time was "benign endometrial hyperplasis." She has not menstruated since.

Examination: A well developed and nourished white woman, not apparently ill. Weight 117 lbs.

Fig. VII.—Photo-micrograph: high power: Showing the orderly arrangement of cells, with interlacing connective tissue strands.

Examination of chest was entirely negative to percussion and auscultation. There was point tenderness over the fifth rib anteriorly in the mid-clavicular line, corresponding almost exactly with the location of the underlying tumor. Abdominal examination revealed deep tenderness in both lower quadrants, a remote mid-line scar, and a remote right rectus scar. Pelvic examination was negative excepting for a minimal amount of cervicitis. X-ray examination of the chest at this time revealed the lesion to have increased in size to 3.5 cms. in diameter. Lateral views indicated that it was located

Fig. VIII.—Anterior-posterior film of chest. Three months post-operative.

in the middle lobe. Bronchograms were done but were of no diagnostic significance. Bronchoscopy revealed the tracheo-bronchial tree to be entirely normal. A diagnosis of benign tumor of the lung was made and exploratory thoracotomy recommended.

Operation: On November 4, 1939, under gas, oxygen, ether anesthesia, the chest was opened through the fifth interspace, anteriorly. The tumor was easily located on the medial and inferior surface of the middle lobe, situated immediately beneath the visceral pleura, and adherent to the pericardium by a short fibrous adhesion band. This was cut, and closer examination of the tumor revealed it to be definitely circumscribed and with no visible evidence of invasion or compression of the surrounding pulmonary tissue. The distal third of the middle lobe, containing the tumor, was then amputated, and the stump ligated with mattress sutures. The ribs were approximated with pericostal sutures, and the soft tissues closed in layers. The lung was re-expanded by positive pressure, a soft catheter, previously inserted serving as an outlet for the retained pleural air.

Histological Examination: The initial report on the specimen, obtained from a rapid section, was that of oat cell, or small cell carcinoma. In view of the obvious discrepance between these microscopical findings and the clinical history, an exhaustive histological investigation was done. The final report reads: "Grossly the lesion consists of a circumscribed and sharply outlined round tumor mass, measuring 3.5 cms. in diameter. It is composed of homogenous, firm grayish-white, opaque tissue. There is compression of the surrounding lung but no invasion.

"Microscopic sections of the tumor reveal a benign adenoma. Several cell types are present, including cuboidal, polygonal and cylindrical, as well as columnar types. The cells are gathered into large and compact masses and are also arranged in columns separated by interlacing bands of hyalinized connective tissue which is highly vascularized. The arrangement is very orderly and there is no objective indication of malignant growth. Frequently cells are disposed around blood vessels in a radial manner. No acini are found. Individual cells have round or oval, moderately or densely chromatic nuclei and no nucleoli. Only an occasional mitotic figure is present. Usually the cytoplasm is difficult to demarcate although in some areas it is evidently abundant."

COURSE

The catheter was removed from the chest, and the negative pressure discontinued on the third post-operative day. The remainder of the hospital stay was uneventful, and she was discharged on the 14th hospital day. Since her discharge she has continued to improve, and now leads a normal regime.

COMMENT

While the location of this peripheral adenoma does not coincide with those cases reported, the tumor presents many of the features peculiar to these benign adenomas of bronchial origin. This is manifested in the age of the patient, the presence of hemoptysis as a persisting and predominating symptom, but, more important, by the definite similarity in the microscopical picture. Hamperl, in a lengthy presentation of nine cases in 1937, pointed out certain very definite histological characteristics occurring in these lesions. These are essentially the variation in the cell type from polygonal to cuboidal, and occasionally columnar and their arrangement in solid masses or palisades. As a rule, they have oval or round nuclei that are usually densely chromatic. In addition, he states the stroma is delicate, highly vascular and with frequent areas of hyalinization.

CONCLUSION

A tumor occurring in the periphery of the right middle lobe, of a type hitherto reported only in the bronchi of the first and second order, and its favorable response to partial lobectomy is reported.

I would like to express my appreciation to Dr. Arnold Strauss, of the Hospital of St. Vincent dePaul, and to Dr. Simon Koletsky, of the Institute of Pathology, Western Reserve University, Cleveland, Ohio, for their interest and histological study of the tumor.

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PRESENT DAY STATUS OF ANESTHESIA

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In keeping with the general trend in medicine rapid strides have been made in the specialty of anesthesiology. These advances have been made in each of the following branches of anesthesia: (1) the preoperative evaluation of the patient for anesthesia and surgery; (2) the responsibility for preoperative and frequently postoperative medication; (3) the supervision of fluid therapy—operative and frequently postoperative; (4) the responsibility for all gas therapy; (5) the treatment of certain post-operative or postanesthetic complications, and (6) the administration of the anesthetic. To elaborate briefly on each of the above topics:

Preoperative Evaluation: It is the duty of the anesthetist to be familiar with every physiologic item that may influence not only the operative course but also the convalescence. These include:[34] (a) the vigor, age, degree of anemia, dehydration, and respiratory and cardiac reserve of the patient; (b) presence of fever, diseases of the liver, kidneys and metabolism, and (c) length of confinement in bed and surgical prognosis of the disease.

A few concrete examples of preoperative preparation are: the intravenous administration of saline, glucose, plasma or whole blood for dehydration, anemia or shock; digitalization combined with bed rest for low cardiac reserve; high carbohydrate regimen for diseases of the liver; iodine and glucose for hyperthyroidism, and insulin and glucose for diabetic patients.

Medication: The selection of medication is dependent on the experience and competence of the physician ordering it and the patient's tolerance to the drugs employed. The more universally employed drugs for preoperative medication are from three main groups: (a) the opium derivatives, (b) the belladonna derivatives, and (c) the barbituric acid derivatives. Among the opium derivatives morphia, pantopon or dilaudid are commonly used. Among the belladonna derivatives, scopolamine or atropine are

used. The barbituric acid derivatives employed are divided into short acting and longer acting drugs. Among the short acting drugs are delvinal sodium, seconal and pentobarbital; among the longer acting drugs are sodium amytal and neonal.

Postoperative medication may influence tremendously the convalescence. Too little results in unnecessary discomfort to the patient. Too much will unnecessarily depress the patient, and predispose to pulmonary complications such as atelectasis, or abdominal complications such as ileus with resultant distention. The recent work of Slaughter and his coworkers[28] relative to the potentiation of morphia by prostigmine may prove to be a valuable factor in lessening postoperative complications due to depressant medication.

Fluid Therapy: The supervision[30] of fluid therapy not only deals with the treatment of shock but also in its prevention. The following examples are a few illustrations of this supervision: (1) The preoperative clysis, either venoclysis or hypodermoclysis, for the patient about to undergo major surgery, for example, a hypodermoclysis of 5 per cent glucose and saline prior to radical mastectomy. This hypodermoclysis frequently inhibits the onset of shock noted with such an operative procedure. (2) The administration of preoperative blood transfusion in patients with severe anemia or marked debilitation prior to their operation. (3) The administration of an intravenous infusion either of glucose, saline or blood, depending on indications, is of value in preventing shock in extensive operative procedures. (4) The postoperative administration of 10 per cent glucose with iodine in toxic thyroid patients is one factor tending to inhibit the occurrence of thyroid crisis.

Gas Therapy: Gas therapy should include not only the administration of certain agents for inhalation anesthesia but also those agents and methods employed for specific therapeutic purposes. (1) Helium and oxygen[2] mixtures are employed for the relief of status asthmaticus. (2) High oxygen concentrations[7] are administered for the treatment of respiratory, cardic, metabolic or abdominal disturbances such as pneumonia, cardic failure, thyroid crises or storm, or abdominal distention.

Complications: Of the many postoperative complications that may arise, there are two of special interest to the anesthetist. The first, pulmonary, is atelectasis in one of three forms: (a) massive, or involving an entire lung; (b) partial, or involving one lobe; (c) patchy or lobular in nature, involving many small areas within one or more lung fields. When more conservative measures fail to relieve this condition, this complication is adequately handled[5] by postoperative suction either by tracheal cathether or by suction bronchoscopy at the earliest sign of trouble and not waiting until it has fully developed. The second common complication is abdominal distention. High concentrations[7] of oxygen are utilized for the relief of that frequently present postoperative complication.

Administration of Anesthesia: The administration of anesthesia is the original and still the primary function of the anesthetist. In this function, rapid strides have been made in the following four subdivisions. (1) In the study of explosive hazards and their prevention; (2) in the employment of inhalation anesthesia with carbon dioxide absorption with or without intratracheal intubation; (3) in the administration of new agents and methods for spinal anesthesia, and (4) in the introduction of new drugs for intravenous anesthesia. The purpose of this paper is to review briefly these four advances, together with two important postoperative duties of the anesthetist, that is, the treatment of atelectasis and abdominal distention.

Explosive Hazards and Their Prevention

Contrary to popular opinion, until recently there were only two anesthetic agents or combinations employed in inhalation anesthesia that were non-explosive. They were nitrous oxide and chloroform. Chloroform[25] is a relatively dangerous agent due to the potential toxic effects on the liver and heart muscle. Nitrous oxide alone is an inadequate anesthetic to produce surgical relaxation. Concentrations necessary to produce surgical relaxation usually interfere with the oxygen[4] requirements of tissue. Table 1, prepared by Professor Hottel,[13] Associate Professor of Chemical Engineering, Massachusetts Institute of Technology, illustrates the explosive limits of some gases mixed with air or oxygen. Five of these gases are now employed in anesthesia; ethylene, cyclopropane, ether, ethyl chloride and vinyl ether, either alone or in combinations. Ethyl chloride should be sparingly used as an inhalation agent because of the narrow range between the anesthetic and the lethal dose. Of the five gases employed in anesthesia, the optimal anesthesia range is within

TABLE I
TABLE OF EXPLOSIVE LIMITS OF SOME GASES MIXED WITH AIR OR OXYGEN (UPWARD PROPAGATION OF FLAME)

Gas	Chemical Formula	One Volume Gas Requires for Complete Combustion: Oxygen, Volumes	Air, Volumes	Explosive Limits* with Air Most† Lower Limit	Explosive Mixture	Upper Limit	Explosive Limits* with Oxygen Most Lower Limit	Explosive Mixture	Upper Limit
Methane	CH_4	2.0	9.5	5.3	11.0	14.0	5.4	36	60
Ethane	C_2H_6	3.5	16.6	3.2	6.6	12.5	4.1	24	50
Propane	C_3H_8	5.0	23.8	2.4	4.7	9.5		18	
Butane	C_4H_{10}	6.5	30.9	1.9	3.7	8.4		15	
Ethylene	C_2H_4	3.0	14.3	2.8	7.6	28.6	2.9	27	80
Propylene	C_3H_6	4.5	21.4	2.0	5.2	11.1	2.1	20	52.8
Cyclopropane	C_3H_6	4.5	21.4	2.4	5.2	10.3	2.5	20	63
Butylene	C_4H_8	6.0	28.5	1.7	4.0	9.0		16	
Ether	$C_4H_{10}O$	6.0	28.5	1.7	4.0	26. ‡	2.1	16	32
Ethyl chloride	C_2H_5Cl	3.0	14.3	4.0	7.6	14.8			
Vinyl ether	C_4H_6O	5.0	23.8	1.7	4.7	27.0	1.8	18	85

the explosive limits in all with the exception of ethylene. The ideal percentage for anesthesia with ethylene alone is 80 to 85 per cent ethylene; additions of oxygen with resultant lessening of these percentages of ethylene may bring ethylene within the explosive range. The mixture of nitrous oxide, oxygen, ether, considered by many to be innocuous, is potentially as dangerous as a mixture of cyclopropane-oxygen.

The greatest danger of ignition of explosive gases comes from the elusive static spark because it cannot be determined when and where it will appear. At the present time the two main measures of protection against explosion are either to employ non-explosive mixtures[13] of gases or to employ some method of intercoupling[12,35] between the patient, the anesthetist, the table and the gas machine. These four bodies (Fig. 1*a*) are the major condensers intimately associated with the gas mixtures.

While studies to eliminate static spark are in progress, recent investigations with mixtures of two explosive agents with oxygen may result in non-explosive anesthetic mixtures.[12A] This work is still in the investigative and laboratory stage.

The methods of safeguarding against spark are either to ground[35] the four bodies which may hold material charges (Fig. 1*b*) of static or to intercouple[12] them directly one to another without grounding. Research in methods of satisfactory grounding is now in progress, such as conductive rubber for shoes, mattings, castors and floor coverings. Until these studies are complete and have been adopted throughout all hospitals, direct intercoupling of these four bodies in proximity to explosive mixtures is the simplest and most acceptable of routine performance for protection. The intercoupler unit designed by Professor J. W. Horton,[35] Department of Biological Engineering, Massachusetts Institute of Technology, is

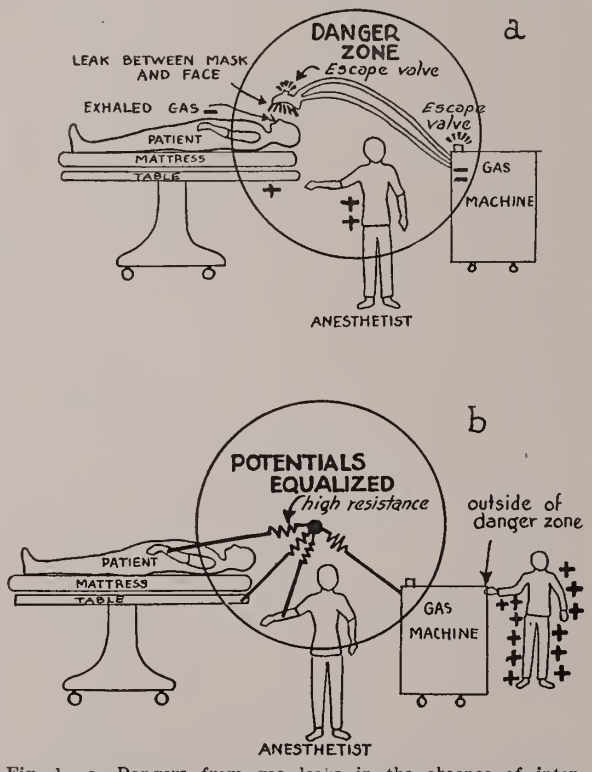

Fig. 1.—a, Dangers from gas leaks in the absence of intercoupling. b, Reduction of tendency of intercoupled bodies to act as a single body of high electrostatic capacity by high resistance intercoupling.

the best to date. This unit is a high resistance conductor across which static will leap without not spark potential and which will choke currents of low voltage and high amperage, such as stray

*Numbers given are per cent by volume of gas in gas-air or gas-oxygen mixture.
†Based on 85 per cent theoretic air or 90 per cent theoretic oxygen.
‡Variously reported at 10 to 48 (cool flame phenomenon).

house currents. This unit provides five terminals and is so arranged that the resistance between any pair of terminals is 1 megohm (one million ohms). Any five bodies connected to the terminals are maintained at the same electrostatic potential. The use of this high resistance intercoupling eliminates certain risks which are involved in direct coupling by means of wires or chains. Any current from the lighting circuit which might accidentally pass through intercoupling connections is limited to magnitudes which are not dangerous. The intercoupled bodies are also prevented from acting as a single electrostatic condenser of high capacity. This is desirable in order not to increase the energy in any spark which might be received from unintercoupled bodies.

Together with intercoupling, the usual precautions against static spark must be adhered to. High humidity should be maintained. Bag and breathing tubes should be wetted before starting anesthesia. The breathing bags should not be disconnected during the operation nor until the mask has been removed from the patient's face. Silk and woolen outer garments should be prohibited. The anesthetist's stool should have no cushion. Woolen blankets and gas machine covers should not be used. The usual precautions against flames, sparks, cautery and similar hazards should be maintained.

Inhalation Anesthesia with Carbon Dioxide Absorption Plus Intratracheal Intubation

Since the original clinical investigation by Waters[31] in 1923 on closed system methods of anesthesia with absorption of the exhaled carbon dioxide, many articles have appeared advocating this principle in all types of inhalation anesthesia. The principle involved is the constant rebreathing of the anesthetic agent, without loss of potency, in a closed system with the removal of the exhaled carbon dioxide by means of soda lime through which the gases pass; and the replenishment of the amount of oxygen for necessary metabolic activity. The advantages of such a principle are threefold: (1) With adequate precautions in the use of a closed system with no leakage it permits the employment of certain anesthetic mixtures which, though in themselves are highly explosive, in many operations are pharmacologically indicated for the well-being of the patient. (2) The closed system[33] with carbon dioxide absorption results in a thorough elimination of carbon dioxide so that respirations are quiet. It also permits the anesthetist to assure control of respiration when indicated.[8] (3) There is a tremendous saving[33] in the quantity of gaseous agents necessary for maintaining anesthesia, which is an important item when expensive agents such as cyclopropane are used.

There are two methods of carbon dioxide absorption. The original method is the to-and-fro method of Waters,[31] in which the anesthetic gases pass back and forth through a canister of soda lime situated between the mask and the rebreathing bag. The second is the circle method[29] (Fig. 2) in which the

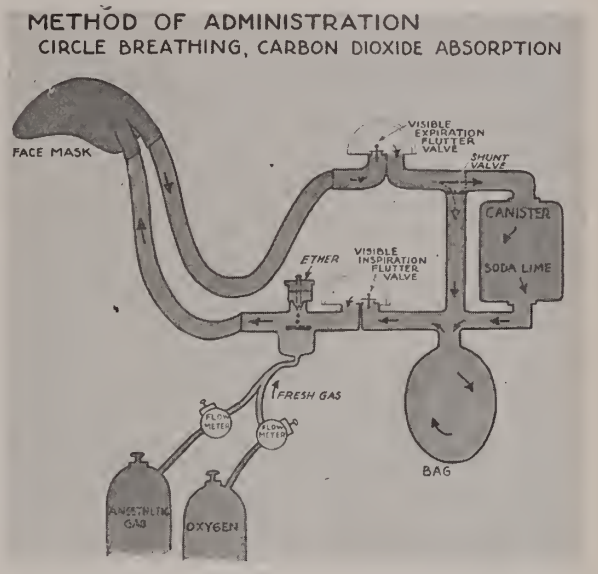

Fig. 2.—The circle breathing, carbon dioxide absorption method of administering an anesthesia.

gases flow in one direction through directional valves in a closed circuit in which a canister of soda lime is placed. The advantages and disadvantages of each I shall not elaborate on, but will merely present a summary of the recent findings of Adriani and Rovenstine[1] in their laboratory investigations of each method. "The variation of efficiency of absorption at various temperatures was considered negligible for practical significance . . . These observations indicate that when tidal volume is equivalent to the air space in the filled canister, optimal efficiency is obtained . . . Gram for gram the ultimate efficiency is approximately identical in both systems (to-and-fro and circle systems) . . . (In the circle system) the temperature of the reacting soda lime is about 5 degrees less than in the to-and-fro type . . . (The to-and-fro type) This type produces a positive pressure in the mask of 2.5 mm. of water and a negative pressure of 3.0 mm. of water . . . In the circle type

under optimal conditions the resistance varies from —8 to+8 mm. of water . . . (Bacterial investigations) Results indicate that the possibility of cross infection, by using a canister for one patient and immediately for another, in both systems is remote."

Another advancement in inhalation anesthesia is in intratracheal intubation. This procedure insures an unobstructed air passage from the lips or nostrils to or near the bifurcation of the trachea by means of a special tube or catheter, either rubber, rubber composition or flexible metal in structure. From the exterior to the vocal cords the route is either transnasal with a rubber catheter or transoral with a composition or a flexible metal catheter. This method insures a patent airway not only for the administration of oxygen and anesthetic mixtures but also for aspiration of secretions that might accumulate in the tracheobronchial tree during the operation, such as (a) bronchiectatic secretions, or (b) intrapulmonary hemorrhages that may occur in some thoracic operations. In certain operations where mild or marked obstructive symptoms are present it is a life-saving procedure. It is especially indicated[26] in the following types of thyroid and allied pathologic conditions: (1) cancer of the thyroid; (2) large intrathoracic goiters: (3) paralysis of vocal cords; (4) large adenomatous goiters with resultant tracheal compression and deviation.

The use of intratracheal intubation with inflation of a tracheal balloon cuff within the trachea around the catheter not only insures a closed system but also prevents seepage or aspiration of nasal and pharyngeal secretions into the lungs in operations about the head or mouth. This method, with the use of adapters to the gas conduits, is an advantage in operations about the head.[6] It results in very little apparatus for anesthesia in this area that might limit the operative field.

NEW AGENTS AND METHODS FOR SPINAL ANESTHESIA

Spinal anesthesia has been the subject of much controversy. The chief objections are: (1) the possibility of harmful effects to the central nervous system; (2) its circulatory depressive effect, and (3) its limited and frequently too short duration. These objections result not because of the use but rather the abuse of this type of anesthesia. The following examples are but a few of these abuses. The first example is the administration by a careless or incompetent individual resulting in lumbar puncture trauma with resultant spinal cord injury. A second example is the injection of too large or too toxic a dose, or the injection of an entirely wrong drug with resultant injury to the spinal cord. A third example is the inefficient or careless supervision of the anesthesia following injection. This usually results: (1) in an undersirable degree of intercostal paralysis from too high an anesthesia; (2) in states of shock occasionally with fatal complication, due not alone to the anesthesia but also the progress of the

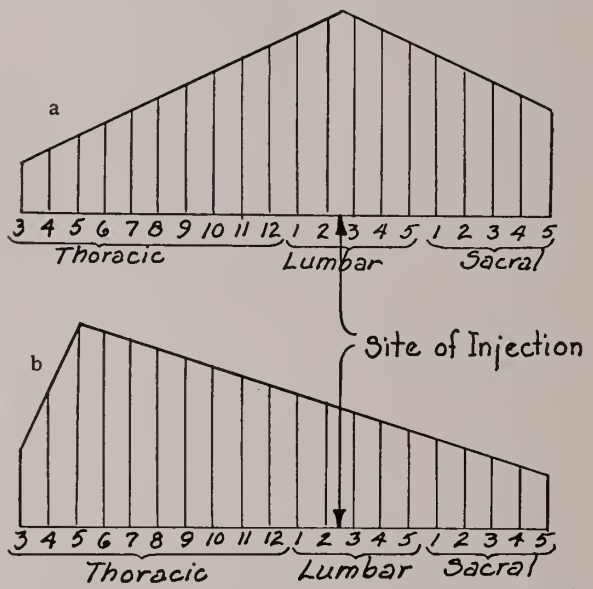
a
3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 1 2 3 4 5
Thoracic
Lumbar
Sacral
Site of Injection
b
3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 1 2 3 4 5
Thoracic
Lumbar
Sacral

Fig. 3—Diagrams of the relative position in the subarachnoid space of concentrations of spinal agents with (a) ordinary barbotage and (b) glucose gravity technics.

operation. Preventives or corrective measures instituted early enough will prevent these states. A fourth example is the injudicious selection of cases for this particular method of anesthesia. The chief onus on spinal anesthesia comes from this very cause; all too frequently spinal anesthesia is elected for the following reason: The patient is desperately ill and any other method might result in a fatality. Thus, paradoxically, spinal anesthesia is too dangerous for a good risk patient but is indicated for a very poor risk patient.

Recent developments in agents and methods of administration or technics have completely eliminated the third objection of limited or too short duration of anesthesia. The usual duration with pontocaine is from one and one-half to two and one-half hours, depending on the site of the operation. The usual duration of anesthesia with nupercaine is from two to three and a half hours. Anesthesia of

longer duration is now obtained when continuous or fractional spinal anesthesia is used. There are many technics or modifications of conventional technics for spinal anesthetic agents.

Pontocaine for spinal anesthesia is obtainable in a 1 per cent solution in normal saline or in a powdered form known as pontocaine niphanoid. The manufacturers claim for this powdered form that there is less tendency of deterioration on prolonged standing, compared to the solution. The three prevalent technics with pontocaine are: (1) the original method[19] with pontocaine solution plus spinal fluid; (2) the mixture of pontocaine and procaine,[20] and (3) the mixture of pontocaine, 1 per cent solution, with varying concentrations of 10 per cent glucose, reported by Sise[27] and preferred by the author.

This addition of glucose results in a mixture that is heavier than spinal fluid mixture (hyperbaric). By the use of the Sise technic (gravity method), the maximal concentration of drug in the subarachnoid space is deposited at or around the nerve roots supplying the site of operation (Fig. 3), thus resulting in the maximal concentration of anesthesia in these areas.

Nupercaine is obtainable in dilutions of 1:200, 1:500, 1:1000, 1:1500, and 1:2000 solutions. Various technics with nupercaine may be subdivided according to the nature of the solution employed: those heavier than spinal fluid (hyperbaric) and those lighter than spinal fluid (hypobaric). The author has had little experience with the hyperbaric solution and will mention only the three prevalent technics. The original method of Keyes and McLellan[15] uses the 1:200 solution in a buffer salt solution plus spinal fluid. The second is the technic of Romberger,[23] combining procaine and nupercaine. The third and more recent is the technic reported by Sankey and Whitacre[24] of a 1:1500 dilution of nupercaine with glucose.

There are three classical technics with hypobaric solutions of nupercaine; Kirschner's, Wilson's and Jones'. Basicly, the Kirschner[16] technic is with

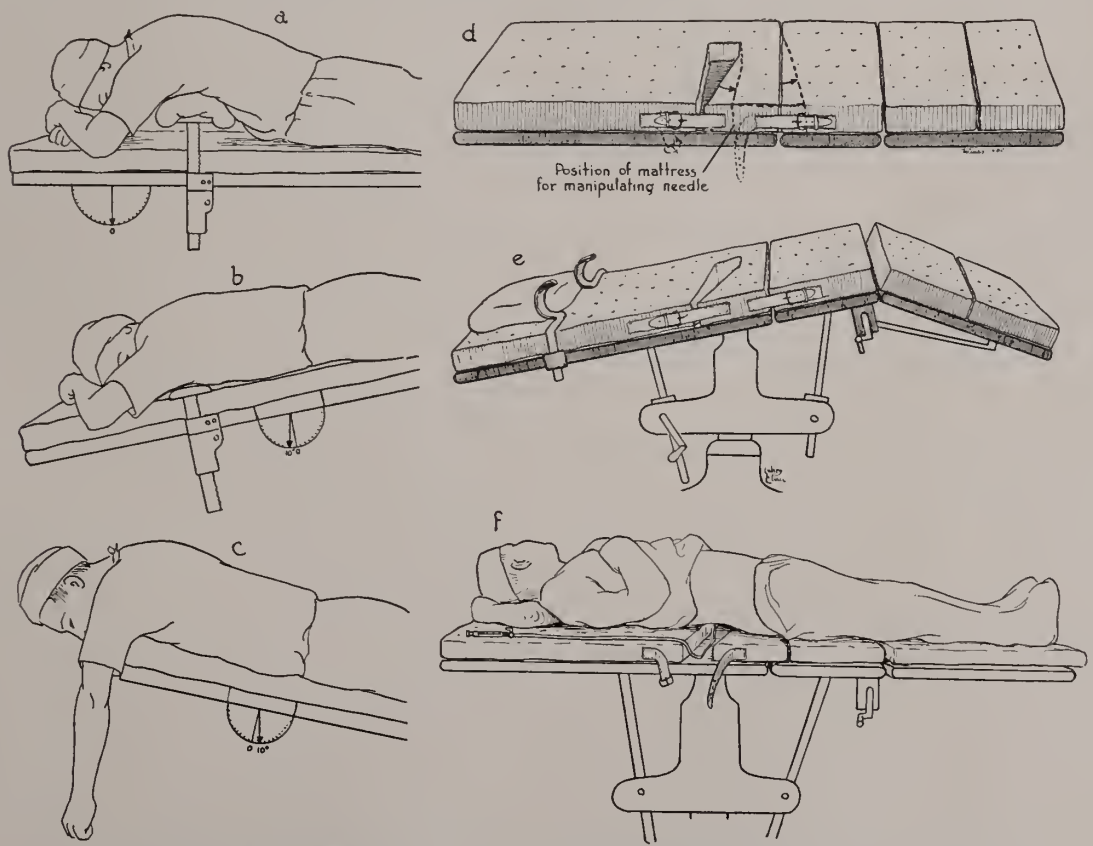

Fig. 4.—a, b and c, Nupercaine technic. a, Prone position, shoulders elevated, head down, with agent settling in thoracic portion at high level. b, Trendelenburg position prior to turning patient supine after adequate height of anesthesia is obtained. c, Optimal position to obtain height of anesthesia. d, e and f, Fractional spinal anesthesia. d, Special mattress with cut out portion. e, Mattress with shoulder braces and break, for Trendelenburg position. f, Patient in position, needle *in situ*, syringe at head of patient, connected with needle by rubber tubing.

the patient in steep Trendelenburg position, spinal fluid is withdrawn to a certain level and then the remaining spinal fluid is overlaid with a measured quantity of nupercaine solution resulting in a segmental nerve block. Fundamentally, Wilson's[32] technic is the injection of warmed hypobaric solution with the patient in the upright or vertical position and remaining thus for a matter of predetermined seconds and then immediately placed in Trendelenburg position. With the Jones'[14] technic, the injection is made with the patient in the horizontal position. He is then turned prone to obtain adequate sensory anesthesia and then turned supine to obtain adequate motor relaxation. Further cephalad rise in anesthesia is safeguarded against by the employment of Trendelenburg position prior to turning the patient. Of the many modifications of Jones' technic, the author[11] prefers that of Woodbridge (Fig. 4 *a, b* and *c*).

The method of continuous or fractional spinal anesthesia, devised and reported by Lemmon,[17] is becoming increasingly popular particularly for operations of unpredictable duration. Anesthesia can be obtained for a period of minutes or maintained over a period of hours, depending on the duration of the operation. Nicholson, Eversole and Hand[22] have recently published a report on this method of administering spinal anesthesia. The principle involved is the injection of small, fractional doses of an anesthetic agent as indicated by means of an indwelling, soft, malleable alloy (nickeloid) needle. This needle is connected with a 10 cc. syringe by means of a 30 inch length of small bore, thick-walled rubber tubing, with Luer-Lok stopcock and connections for syringe and needle. A special thick mattress (Fig 4 *d* and *e*) with a cut-out section protects this needle from contact with the table or mattress proper. This cut-out section comes under the lumbar spinal area when the patient is supine (Fig. 4 *f*). Clinical investigations[9] are now in progress to determine the better agent and dilution for fractional anesthesia.

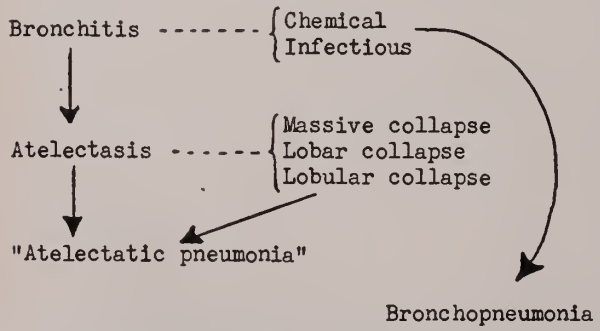

Fig. 5.—Diagrammatic illustration of the probable course of events in the development of many postoperative pulmonary complications in patients with bronchitis.

INTRAVENOUS ANESTHESIA

While intravenous anesthesia dates back to 1872 it is only with the introduction of short acting barbiturates such as evipal soluble and sodium pentothal[18] that intravenous anesthesia has become a more satisfactory procedure. The chief advantages of this method of anesthesia are: (1) the induction is usually rapid, pleasant and smooth; (2) the agent is non-explosive, thus permitting the use of diathermy, cautery or x-rays or fluoroscopy; (3) the recovery is pleasant with the usual striking absence of vomiting and the variable period of amnesia.

Carraway[3] advocates the use of the barbiturates as a primary anesthetic for all types of operations. It is the author's opinion that the best results are obtained when the barbiturates are used as a primary anesthesia only in minor procedures, such as short bone and joint operations, encephalography,[21] and other short neurologic procedures, and painful dressings, or as a complementary agent[10] together with adequate oxygen, for the comfort of the patient when spinal anesthesia is the primary anesthesia.

POSTOPERATIVE SUCTION BRONCHOSCOPY

There are certain postoperative pulmonary complications that may be treated by suction bronchoscopy. This treatment is well within the field of the anesthetist.

It has been fairly well established that the development of postoperative pulmonary complications is influenced very little by the agent used to produce anesthesia. The clinical picture and the rapidity of development of many pulmonary difficulties seem best explained on an atelectatic basis with the following contributing factors: (1) the presence of bronchitis, either chemical or infectious in origin; (2) decreased lung aeration due to elevation of the diaphragm following upper abdominal operations; (3) the voluntary shallow respiratory efforts to minimize pain from abdominal wounds; (4) the splinting of the respiratory excursions by too tight binders. The diagrams[5] in Figure 5 illustrate the probable chain of events in pulmonary complications in patients with bronchitis. The ultimate prognosis depends on the amount of lung involved and the

promptness with which the complication is adequately treated.

Eversole[5] states: "When one or more lobes of the lungs are suddenly collapsed the signs and symptoms at first are those that result from the actual mechanical changes in the chest. The symptoms are usually quite sudden in onset, and are largely those of acute oxygen want. There is a sharp rise in temperature and in the respiratory rate. There may be evidence of considerable respiratory embarrassment and some degree of cyanosis usually is present. The roentgenologic picture shows decreased aeration of the lung on the affected side, with a shift of the mediastinum toward that side. There is usually an elevation of the diaphragm on the affected side.

"When a smaller portion of the lung is involved such as one or more lobules the symptoms are not so striking or so acute in onset. There is no marked respiratory embarrassment and cyanosis may be only slight or even entirely absent. There is usually a rise in temperature but this rise is not so sudden as when one or more lobes of the lung are involved. With lobular atelectasis the clinical course as well as the roentgenologic appearance of the chest may very closely simulate bronchopneumonia. There is little doubt that, if unrelieved, lobular atelectasis will eventually result in pneumonia."

Considerations in the prevention of atelectatic complications include: (1) frequent turning of the patient and urging him to cough up any accumulated fluid in the respiratory tree; (2) cautious use of respiratory depressive drugs for the relief of pain or to produce sleep. The value of carbon dioxide as a preventive of complications is questioned.

When conservative measures fail, immediate active measures should be instituted to remove the fluid. The simplest method is the aspiration of the secretions in the trachea by means of a fairly large urethral catheter (22 to 24 French) passed into the larynx by means of forceps under direct laryngoscopic vision. When atelectasis due to occlusion of an air passage is present, the most efficient and surest method of treatment is the aspiration of the secretions in the respiratory passages by means of suction bronchoscopy.[5]

TREATMENT OF DISTENTION WITH HIGH OXYGEN CONCENTRATIONS

Abdominal distention is a disturbing postoperative complication. The basic cause is the accumulation of gas in the gastro-intestinal tract. Laboratory investigation has demonstrated that the chief constituent of this gas is inert and very slowly absorbable nitrogen. Among the many methods of treating distention are: (1) use of a rectal tube; (2) use of drugs to stimulate peristalsis as pilocarpine and prostigmine; (3) counter-irritant to the abdomen as turpentine stupes, external heat and so forth. Recent investigators,[7] keeping in mind the tendency of the body to the equilibrium of gases conceived the idea of placing the patient with distention in an atmosphere of "100 per cent" oxygen so the end result would be the reduction of nitrogen in the intestinal tract by its replacement with oxygen.

The physiologic principles involved are the saturation of the pulmonary passages with "100 per cent" oxygen with subsequent removal or flushing out of all inert waste gases. With the saturation of the pulmonary passages, a gradual state of gaseous equilibrium is reached between the excess of oxygen in the lungs and excess of nitrogen in the intestinal tract through the blood stream. While this equilibrium is in progress the oxygen in the gastro-intestinal tract as well as that in the lungs is being utilized by the body tissues, with the resultant deflation or lessening of distention in the alimentary tract.

SUMMARY

1. The specialty of anesthesiology covers more than the simple administration of anesthesia.

2. Preoperative evaluation and preparation of the patient are within this specialty.

3. Medication is derived from three main groups; the opium, belladonna and barbituric acid derivatives. The proper amount depends on the tolerance of the patient plus the judgment of the individual ordering it.

4. Fluid therapy influences not only the operative course but also the postoperative convalescence.

5. The knowledge of gas therapy is essential in its employment for specific therapeutic purposes.

6. The anesthetist shall be competent to prevent or treat certain postoperative complications of the respiratory or gastro-intestinal tract.

7. The problem of explosive hazard is being investigated and gradually eliminated by studies directed to: (a) the rendering of gaseous mixtures non-explosive and (b) devising means to eliminate the potential dangers of spark and ignition from static electricity.

8. The employment of methods of carbon dioxide absorption is an aid in the use of explosive and expensive anesthetic agents.

9. Intratracheal intubation not only prevents respiratory obstruction but also insures a ready method for the aspiration of secretions if necessary.

10. New agents and methods for spinal anesthesia plus competent administration and supervision have eliminated most objections to this form of anesthesia.

11. Certain agents and methods result in optimal states of anesthesia; for instance, pontocaine-glucose for concentrations of anesthesia in the upper abdomen, and fractional spinal for operations of preoperatively unpredictable duration.

12. The use of short acting barbiturates has revived the employment of intravenous anesthesia with its many favorable effects. The author recommends its use as a primary agent in minor procedures only.

13. The early recognition of postoperative pulmonary complications or impending complications with the early treatment of such by either simple aspiration or bronchoscopy cannot be stressed too strongly.

14. High concentrations of oxygen by means of adequate equipment have been added to the accepted methods of conservative treatment of postoperative abdominal distention.

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PARTIAL GASTRECTOMY FOR CHRONIC ULCER*

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In the past two and one-half years, forty-six patients have been operated on in this hospital for various lesions of the stomach and duodenum. Eighteen have had high gastric resections for chronic ulcer, with no deaths. Resections were done only on intractable or complicated cases. All of the patients operated upon have returned to their occupations and are leading essentially normal lives, except one who committed suicide. Many of them are seamen, and are unable to follow even a modified dietary regime. Yet there has been no recurrence of ulcer in any of these patients.

FIG. 1

HOSPITAL ADMISSIONS JANUARY 1, 1939, TO JULY 1, 1941	10,268	
TOTAL ULCER PATIENTS TREATED IN ABOVE PERIOD	92	GASTRIC ULCERS 21 DUODENAL ULCERS 71
ULCERS TREATED BY GASTRIC RESECTION	18	RESECTIONS FOR GASTRIC ULCERS 8 (38.9% OF CASES TREATED) RESECTIONS FOR DUODENAL ULCERS 10 (15.8% OF CASES TREATED)
DEATHS FOLLOWING GASTRIC RESECTION	0	

The eighteen cases treated by gastric resection were taken from a total of ninety-two ulcer patients and from over ten thousand hospital admissions. There were twenty-one gastric and seventy-one duodenal lesions in the group.

The percentage of gastric ulcers treated by surgery was much higher than duodenal ulcers—as shown on the accompanying diagram (Fig. 1). All patients with chronic ulcer except those showing perforation or obstruction were given a thorough trial on conservative treatment before surgery was considered. If the ulcer did not heal under medical management and remain healed on a simple dietary regime, operation was considered. Where recent hemorrhage had occurred, operation was delayed. One or more massive hemorrhages from recurrent or chronic ulcer was considered sufficient cause for delayed gastric resection. Obstruction and chronic perforation in contrast were operated upon early. There is little reason for delay in obstruction, although more conservative surgery is frequently indicated.

Our attitude toward gastric ulcer is much more radical than toward duodenal ulcer. It is frequently difficult to differentiate gastric ulcer from gastric malignancy clinically or roentgenologically and we feel that all doubtful cases should have the benefit of early exploration. In the majority of cases of

*Read at a recent meeting of the Norfolk County Medical Society.

gastric ulcer we carry out a brief course of medical therapy. If the ulcer does not rapidly decrease in size roentgenologically and show clinical evidence of healing, operation is considered (Fig. 2.).

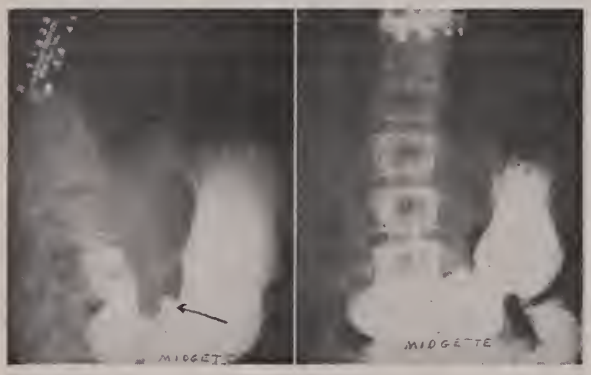

Fig. 2.—A. Penetrating ulcer on lesser curvature, treated conservatively.
B. Plate made after a few weeks of treatment. Ulcer deformity has disappeared and patient is free of symptoms.

There are many factors to be taken into consideration in deciding to subject an ulcer patient to surgery. Gastric resection is a major operative procedure and it cannot be performed promiscuously without high mortality. Patients must be carefully selected as to their fitness to withstand such a procedure. They must be carefully prepared. The operation must be carried out in a technically correct manner, and the postoperative care must be skillful and untiring. If these principles are carried out, the mortality can be kept down to a very low figure. In five hundred gastric resections reported from the Mayo Clinic, the mortality was 4.1 per cent, as compared with one thousand gastro-enterostomies in which mortality was 2.1 per cent.[1] These figures compare favorably with those from other large clinics. In another group reported from the same clinic, the mortality was 1.9 per cent for two hundred and twelve partial gastrectomies.[2] This is well below the general average. It is almost universally agreed that the recurrence rate of ulcer following gastro-enterostomy is many times higher than that following high gastric resection. When the mortality for secondary operations following gastro-enterostomy is taken into consideration and added to the primary mortality rate, the total is probably higher than that for primary partial gastrectomy. It would appear that partial gastrectomy most adequately fulfills the requirements for the treatment of chronic ulcer where surgery is indicated.

Most chronic ulcer patients have been on an inadequate diet over a prolonged period of time and are suffering from some degree of malnutrition. The popular Sippy diet leaves much to be desired and is lacking in several important elements. Avitaminosis is common; blood plasma levels are frequently low. In preparing patients for operation, an effort should be made to restore blood plasma levels to a normal of above seven grams per cent. High protein feedings is the best means of accomplishing this where possible, but it may be supplemented by plasma infusions or whole blood. Our plasma bank has been of invaluable aid to some of these patients. Where the red blood count is low, whole blood is especially indicated, and if possible no patient should be operated on with a red blood cell count under four million per cubic millimeter. Cevitamic acid has been shown to be extremely important in wound healing and should be supplied in abundance for at least one week prior to operation. The B complex and especially thiamine chloride has

Fig. 3.—A. Ulcer high on lesser curvature, no response to conservative therapy.
B. Plate made following high gastric resection. Complete relief of symptoms and patient is carrying on his usual occupation.

a very important, but ill defined role in promoting smooth convalescence. It is possible that it acts as a catalyst to fluid exchange through the cell membrane and aids in this way to maintain water balance. It should be supplied in excess both prior to and following operation.

Cardiac disease is not a definite contra-indication to stomach surgery when the heart is well compensated, and it is surprising how well cardiac patients withstand operation.

Prior to surgery the fluid and electrolyte balances may usually be taken care of through oral feedings, unless obstruction is present.

We use spinal anesthesia almost routinely. Two cubic centimeters of ten per cent pontocaine solution is given at the second lumbar interspace, and by gravity the anesthesia is allowed to reach the fourth dorsal segment. This would be adequate were it not for the rather forceful traction sometimes necessary in delivering the cardiac portion of the stomach. The discomfort from this traction is relieved by splanchnic block, using forty cubic centimeters of one per cent novocain. Incidentally we have used continuous spinal anesthesia in a few cases but have not found it preferable to the single dose of pontocaine combined with splanchnic block.

It is our practice to start an intravenous infusion of five per cent glucose in normal saline at the beginning of every gastric operation and later to switch in five hundred cubic centimeters of previously matched whole bank blood. If the operation has been long there may be some tightening of the abdominal muscles interfering with closure of the abdomen. A few cubic centimeters of five per cent pentothal solution introduced into the infusion tubing will relieve this straining and discomfort without the necessity of producing complete narcosis. There is rarely any postoperative nausea or vomiting and the patient on return to his room shows no evidence of shock. It is unnecessary to stress the extreme importance of preventing primary operative shock in promoting smooth recovery.

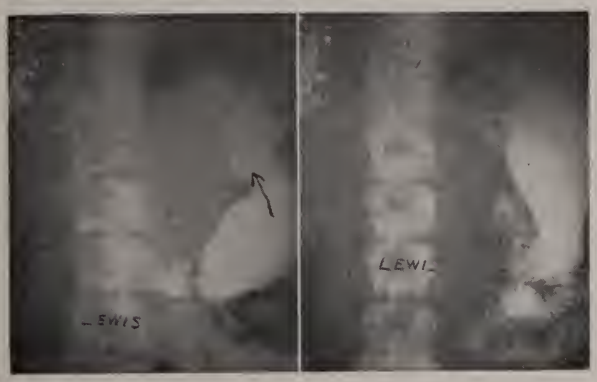

Fig. 4.—A. Chronic perforation of ulcer high on posterior wall, with considerable cicatrization and spasticity. Treated by partial gastric resection.
B. Plate made following partial resection. Patient now symptom-free.

Our operative methods are along fairly standardized lines, but are varied slightly to suit the individual case. A midline incision is preferred and closure is done with silk. Fine silk is used to reinforce all anastomoses, especially at the angles, and to reinforce the closure of the duodenal stump. Angulation and constrictions are carefully avoided. We remove approximately two-thirds of the stomach in the average case, or enough to get rid of the major acid-bearing area. The remaining stomach is anastomosed to the upper jejunum anterior to the transverse colon. To us, it appears of academic interest whether the jejunum is placed isoperistaltic or antiperistaltic. Sometimes we use one, sometimes the other method, depending on which allows the bowel to lie most naturally. They both appear to function equally well (Fig. 3). There is one point which we would especially like to stress, that is the avoidance of using any clamps or instruments which crush tissue in the region of the anastomosis. We rarely use any clamps, but especially avoid the heavy crushing type, which delay healing and invite edema about the stoma.

Postoperative care is fully as important as the technical aspect of operation. Continuous gastric suction is maintained and the patient is allowed to drink water freely as long as the suction functions well. Liquid feedings are started in forty-eight hours with the tube clamped off. If well tolerated the tube is removed and semi-solids are given in frequent small feedings. We replace the tube at the slightest sign of distention. Soft food is usually well tolerated by the fourth or fifth day.

It has been shown to be of paramount importance in gastric surgery that the water balance be maintained. Plasma protein levels if allowed to fall permit edema about the anastomosis and interfere with emptying. We therefore supply five hundred to one thousand cubic centimeters of plasma in saline daily until adequate food can be taken by mouth. If the red count or hemoglobin is low whole blood should be substituted for plasma. Considerable electrolytes are lost in the gastric lavage and urine. We have found ten to twenty-five grams of sodium chloride in the stomach washings for a twenty-four hour period. It requires almost three thousand cubic centimeters of normal saline solution to supply twenty-five grams of sodium chloride. It is a good plan to check blood chlorides and plasma protein levels daily, as well as the chlorides lost in urine and gastric lavage.

Usually two thousand five hundred to three thousand five hundred cubic centimeters of intravenous fluids daily will take care of body needs while gastric suction is being maintained. Most of this

is supplied in the form of five per cent glucose in normal saline solution.

One of the disadvantages of the continuous gastric suction is that mucus collects in the pharnyx and trachea and predisposes to atelectasis. To prevent this the patient is turned frequently, deep breathing and coughing are encouraged, water by mouth is permitted freely, and excessive sedation is avoided. If mucus still collects or atelectasis appears imminent, the tube should be removed for short periods of time and then replaced.

Fig. 5.—A. Chronic obstructive duodenal ulcer; perforation 18 months previously. No relief from prolonged medical therapy. Treated by partial gastric resection.
B. Plate made following high gastric resection. He is now returned to duty and is symptom free.

It is with considerable satisfaction that we have noted the increasing importance which is being attached to physiology in surgical patients in recent years. There have been few recent technical improvements but the physiological approach is reflected in the general lowering of mortality in all major surgery. No where is this more true than in gastric surgery. Certainly in the past the technical aspect has been allowed to dominate the picture. Important as it is, we believe surgical technic will be subordinated in the future to physiology, and through broader application of physiological principles, the quality of surgical treatment will continue to improve (Figs. 4 and 5).

SUMMARY

1. Eighteen partial gastric resections were done for chronic ulcer. These patients were selected from ninety-two suffering with ulcer of the stomach or duodenum.

2. There were no deaths in the cases treated by gastric resection. All apparently recovered from the disease and there have been no recurrences of ulcer.

3. We attribute the absence of mortality to careful selection of patients, adequate preparation, careful attention to technical details at operation, adequate postoperative care, and observance of the physiological principles involved in this type of surgery.

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INDICATIONS FOR TERMINATING ARTIFICIAL PNEUMOTHORAX*

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The decision as to when an artificial pneumothorax should be terminated is often difficult because our knowledge of the criteria for doing so is still incomplete. Each case must be considered individually and no general statement which will apply to all cases can be made.

The most important consideration in making a decision as to how long an artificial pneumothorax should be continued is the type of lesion which is present at the start of the treatment. It seems quite obvious that a lesion which is exudative in nature and shows no demonstrable cavitation will not require as long to become arrested as one which is characterized by thick-walled cavities or fibrocaseous disease.

In reckoning the time which must elapse before an artificial pneumothorax should be terminated, the actual date upon which the treatment was started is not the one to be considered. The reckoning should begin from the time that a satisfactory collapse, as evidenced by closure of all cavities, conversion of the sputum from the positive to nega-

*Read at the first regular meeting of the Society of Chest Physicians of Virginia, held in Richmond, March 31, 1942.

tive and disappearance of evidences of activity of the disease is obtained. Should cavities at any time reopen or the sputum become positive, the time should be reckoned from the time the cavities are again closed and the sputum again becomes negative.

The minimum time after the achievement of a satisfactory collapse that an artificial pneumothorax should be maintained is two years. The cases which fall in the class of those which require this minimum are those which originally present lesions which are predominantly exudative in character and which fall within the minimal or early moderately advanced classifications.

The extent of the lesions has less influence upon the necessary duration of the artificial pneumothorax than does the type of lesion present. Lesions which present large cavities or cavities with thick, irregular walls require longer to heal than those with smaller or thinner walled cavities. The chronicity of the lesions is also an important consideration, a more chronic lesion requiring longer to become arrested.

An important criterion of the time an artificial pneumothorax should be maintained is the rapidity with which the cavities close and the maximum degree of collapse of the affected lobe is obtained. The rapid closure of cavities and the rapid and extensive collapse of the affected lobe indicates a greater power of contracting on the part of the fibrous tissue in the lesions, which promises more rapid and more complete healing. This phenomenon is best illustrated by the selective collapse which occurs in certain cases.

In more chronic cases with more extensive fibrosis, the retraction of the lobe will be slower because the fibrous tissue has probably already expended a large part of its contracting power and the walls of the cavities are thicker and more rigid, and therefore slower to close. Healing will therefore be retarded and the required duration of the collapse necessarily longer.

Therefore, in determining the necessary duration of an artificial pneumothorax, a valuable yard-stick is the rate of cavity closure and lobar retraction observed in the individual case. When the closure or the lobar retraction is rapid, the minimum of two years may be sufficient, but when this takes several months or a year, the duration may have to be extended for a long time, or perhaps forever. Durations of five to eight years are not infrequently considered necessary.

There are certain cases which at the onset of the treatment presented large, thick-walled cavities which require a long time to close and a long time to obtain a persistently negative sputum. In these cases the maintenance of a permanent pneumothorax, or the substitution of a thoracoplasty for the pneumothorax to maintain the collapse should be considered. It is often a difficult question to decide. The patient will probably be doing well with his artificial pneumothorax and it is not at all certain that he will survive an extensive resection of his ribs or that he will obtain the type of collapse he needs from the thoracoplasty. Therefore, it seems that the wisest course to take is to postpone the termination of the artificial pneumothorax indefinitely.

When an apparently successful collapse has been maintained for what seems sufficient time to accomplish healing of the tuberculosis process, certain other considerations must be taken into account before the collapsed lung is permitted to re-expand. The general physical condition of the patient is important. If there are such indications of ill-health as undue fatigue, poor nutrition, anorexia, or any other of the symptoms of chronic tuberculosis, one should assume that healing is not complete and termination of the artificial pneumothorax should be postponed. Further, it should be determined that the leukocytic index and the red blood cell sedimentation rate are normal.

It is also important to test the effectiveness of the collapse under the conditions of work or activity which the patient will have to observe after his lung has re-expanded. For this reason he should have maintained himself in good health for at least six months with his artificial pneumothorax before it is terminated.

When artificial pneumothorax becomes complicated by certain of the various conditions which sometimes develop during the course of the treatment, the question of whether or not to continue the collapse must be considered. In general, it may be said that the decision will depend upon the condition of the collapsed lung and the effectiveness of the collapse, as well as the nature of the complication.

The development of clear effusion, or even empyema, does not indicate re-expansion of the lung if there are still active lesions remaining in it. The collapse should be maintained while appropriate treatment of the complication is carried out.

The development of a contra-lateral spread of the disease is not always an indication for termination of an artificial pneumothorax. If it seems feasible, bilateral artificial pneumothorax may be instituted. In some cases, however, the spread may be so extensive as to render the prognosis hopeless, and in such cases it is futile to continue the unilateral collapse and it is best to discontinue it.

In certain patients who have impaired circulatory systems, collapse of the lung by artificial pneumothorax results in symptoms of circulatory failure of more or less severity. When these are severe, the artificial pneumothorax may have to be terminated. However, in other cases the circulatory failure can be compensated by digitalization and the artificial pneumothorax continued. In these cases the decision whether or not to terminate the artificial pneumothorax will depend upon whether or not the complication can be so controlled.

Then there are certain patients who are rendered dyspneic by collapse of the lung because of too great reduction of their respiratory capacity which may have already been reduced by pulmonary fibrosis, emphysema, etc. If a satisfactory degree of collapse cannot be maintained within the limits of their respiratory capacity the artificial pneumothorax should be discontinued.

What has been said to this point has had to do with the duration or termination of a successful artificial pneumothorax. It is also of importance to decide when an unsatisfactory pneumothorax should be terminated. This is true because to continue an ineffective artificial pneumothorax indefinitely is to court disaster without hope of materially benefiting the patient. It has been our observation that the cases of pneumothorax which develop the most serious complications are those in which an ineffective collapse is persisted in. Therefore, when it becomes apparent that a satisfactory collapse of the affected lung cannot be obtained even with the addition of other procedures, such as pneumonolysis or phrenic nerve interruption, termination of the artificial pneumothorax should be seriously considered.

If the patient's general physical condition is such that he can safely undergo surgery, the artificial pneumothorax should be terminated at once and some other collapse measure instituted. If his genral condition has not shown definite improvement and it seems unlikely that he will ever be a candidate for other more radical collapse measures, the artificial pneumothorax should be terminated. In our experience it has proven to be futile to continue an ineffectual collapse in such patients, and to do so may actually shorten their lives due to the complications which may occur.

The only cases in which there is a justification for continuing an unsatisfactory artificial pneumothorax are those who show a marked general improvement even with their ineffective collapse and with a little more improvement in their general condition may be rendered fit subjects for more radical surgery. In these cases the unsatisfactory artificial pneumothorax should be terminated as soon as the desired conditions are achieved.

In conclusion, we believe that the minimum time which should elapse between the time when all evidences of tuberculosis activity—open cavities, tubercle bacilli in the sputum, and toxic symptoms—disappear and the termination of an artificial pneumothorax is two years. This minimum should be applied only to the relatively early cases which at the start of the treatment present no cavitation or only small thin-walled cavities and in which a maximum of retraction of the affected lobe and closure of the cavities is achieved early in the course of the treatment.

The more chronic the case at the start of the treatment, the longer the artificial pneumothorax should be continued. Durations of three to five years are required in many cases and durations of five to eight years are not uncommon. In a few cases it seems wiser to postpone termination indefinitely.

Before an apparently successful artificial pneumothorax is abandoned, the patient should have maintained good health for at least six months under the conditions of activity under which it will be necessary for him to live. Poor general physical condition or any symptoms of chronic tuberculosis contra-indicate re-expansion of a lung which is apparently satisfactorily collapsed.

The development of pleural effusion or empyema

does not necessarily indicate re-expansion of an effectively collapsed lung. Contra-lateral spread of the disease indicates termination of an artificial pneumothorax only when it is so extensive that it renders the prognosis hopeless.

Artificial pneumothorax should be terminated in the presence of uncontrolled circulatory failure and in patients whose respiratory reserve has been so impaired by the pulmonary pathology that an effectual collapse is incompatible with proper oxygenation of the blood.

An ineffective artificial pneumothorax should be terminated as soon as it becomes apparent that it cannot be made effective by the addition of other measures, unless it seems apparent that by continuing the unsatisfactory collapse the patient's general condition can be improved so that he will later become a candidate for surgery.

STONES IN FEMALE URETHRA

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Stones in the female urethra are not commonly seen in general practice, but there are usually two or three cases reported each year in urological literature. I have made no exhaustive search in preparation of this paper, but I was impressed by the similarity of certain features of this condition in studying the cases collectively. Stones in the male urethra are much more common, as can be expected from the anatomical structure.

Diverticula undoubtedly precede the formation of stones in the female urethra, and their development is not absolutely clear. According to Hugh Cabot, there are no glands in the proximal two-thirds of the urethra which might be forerunners, but there are crypts which might allow pooling of urine or harboring gravel. Andrew McNally, who has done a great deal of work on female urethral diverticula, and other workers, think that, due to the difference in embryology, the congenital type is rare, while Herbert E. Schmitz offers proof of this type. All agree, however, that the important factors of the acquired type are structural weakness, trauma, and infection.

Accepting that diverticula are the predisposing causes of stone, Maper's description of the three principal causes of stone formation in this anatomical location are without priority: (1) Metabolic disturbance of urinary secretion, which causes a clinical change, and precipitation of salts that are normally dissolved. (2) A hydraulic and physical disturbance of micturition following a change in the caliber of the urethra, or anatomic deformities which favor retention and precipitation of urinary salts. (3) Foreign bodies in the urethra.

In the cases reviewed I might say that the symptoms are conspicuous by their absence, until late, when the stone has reached such proportions as to offer obstruction. All of the cases had mild symptoms for 12 years or longer, which might have been attributed to a low grade cystitis in the beginning, with frequency, burning and tenesmus, apparently never requiring urological consultation until the mass had become large enough to feel, as in the case I will report. Many, however, later will give definite and very disturbing urinary symptoms which might be divided into (1) Local, such as incontinence or obstruction, perineal pain or pain on sitting, and a feeling of fullness in the vagina with painful intercourse, and (2) General urinary symptoms with recurring attacks of cystitis, persistent urinary infection, with exacerbations of frequency, urgency, chills, fever and backache, suggesting an ascending pyelonephritis.

The presence of stone might easily be overlooked in routine examination unless large enough to arouse suspicion, and not until then would the necessary specialized measures be instituted to make the diagnosis. X-ray, to be sure, is most important, but urethroscopy and injection of opaque media before X-ray are essential to accurately locate the stone which in most cases is in the middle third of the urethra. With the urethroscope the ostium of the cavity holding the stone can usually be seen and, if the urethra is distended, the glistening stone surface can be seen. This procedure might determine the method of removing the stone.

Until the last ten years not much attention had been given the female urethra. At the University

of California Hospital up to May 1936, the diagnosis of urethral diverticulum (forerunner of stone) had been made only twice. Interest was thus aroused and during the next year nine cases were demonstrated.

Conditions which might be confused with urethral stones, such as tumor, urethrocele or thick walled diverticulum, can easily be ruled out with X-ray and urethroscopy.

Treatment resolves itself into removal of the stone. This can be done, first, by crushing the stone through the urethra if the opening is large enough and the stone small enough, washing the fragments from within the diverticulum and scarifying the walls to obliterate it. This method was used successfully by Franklin D. Edwards and L. E. Bedders in their case. The other method is open operation through the vagina, carefully dissecting out the diverticulum and ligating same at the junction of the urethra. This method was used by Eugene A. Gaston and Joseph Ferrucci, which case is almost identical to the case I wish to present, except for the single stone.

The latter method is undoubtedly the one of choice with large stones. The diverticulum can be removed at the same time with assurance of no recurrence of stone or after symptoms from the sac. Suturing to occlude the sac could not safely be done, and scarification of the walls is blind and certainly could not be relied upon to obliterate it.

CASE REPOT

Mrs. H. F., 41 years of age, consulted her family physician after having missed two menstrual periods. Pregnancy was diagnosed, but examination of the patient revealed a hard lump in the anterior wall of the vagina for which I was consulted. Since the birth of her last child 3 years ago, patient claimed only minor urinary symptoms, consisting of burning, tenesmus, urgency, frequency and occasional hematuria, but never severe enough, she thought, to consult a doctor.

After delivery of her first child 18 years ago she was told by her physician that a small lump about the size of a pea existed in the anterior wall of the vagina. Nothing was done about it and she has given birth to eight living children since. Patient has never been sick except during childbirth.

Examination revealed a well developed and nourished female of about 40 years. Nothing grossly abnormal could be found except an enlarged uterus of about 2 months pregnancy and a mass the size of a walnut in the anterior vaginal wall. It was hard, freely movable, and elicited a grating sensation when palpated between the fingers.

Urine examination revealed one plus albumen with a few pus and blood cells.

A urethroscope was passed and about 5 cms. up in the posterior wall of the uretha was found a small opening about ½ cm. in diameter with a glistening white surface below, which felt hard on probing. The bladder was cystoscoped and found normal. X-ray was made with catheter in the urethra and 12% sodium iodide instilled into the bladder. The stones were apparent as in Figure 1.

Figure 1.

Operation was advised, because of the size of the stones, and accepted.

Technic: General anesthesia was used because of the temperament of the patient. A 24F catheter was first put in the urethra as a guide, then a transverse incision was made in the anterior wall of the vagina and the mucous membrane dissected back. A little posterior to this line of incision the denser fibrous and muscular tissue was incised to the diverticulous sac and dissected back in all directions as far as possible. The sac was then opened and the two stones shown in Figure 2 delivered. The diverticulum was then dissected out, tied off at the neck and removed. The fibrous and muscular tissue was closed with 0 chromic and the mucous membrane closed with 00 chromic. None of the suture lines of the different layers approximated. An indwelling

Figure 2.

catheter was left in the bladder 2 days and irrigated with boric acid every 4 hours. Healing was quick and to my knowledge never leaked urine. Seen 6 weeks after operation a solution of methylene blue was forced through the urethral meatus into the bladder, and none was found in the vagina.

CONCLUSIONS

1. The length of time required for urethral stones to form would naturally vary, depending on urinary chemistry, or type of obstruction, if this be the case, but in all reports encountered, where time could definitely be established, it was over ten years.

2. While all cases had definite symptoms, they appeared in the majority after the stones had become large, and in most cases were not severe.

3. Many women are seen in office practice, especially those having had children, with vague, recurrent urinary symptoms. It might be well to keep in mind not only the rare urethral calculus, but its forerunner diverticulum, which occurs more often than realized.

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CURRENT INFORMATION ON SYPHILIS

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COMMITTEE ON SYPHILIS CONTROL
MEDICAL SOCIETY OF VIRGINIA

Social Aspect of Late Medical Syphilis

It is unnecessary to repeat the figures showing the general incidence of syphilis. Newspapers, magazines, radio broadcasts as well as medical publications have already made this general information. It cannot be debated that this widespread infection is a serious handicap to human welfare. The untoward effect of this disease on the happiness, comfort, efficiency and life expectancy is colossal. It is hard to visualize the harmfulness of syphilis on the 10,000,000 Americans affected by it.

The major part of a discussion in the current campaign has been on the subject of preventing early syphilis. As practical public health for the protection of future generations this may be justified, but the latent and late syphilitic should not be ignored. Proper management of latent and late syphilis benefits greatly the individual by improving his health status and preventing incurable complications as well as gives protection to others by preventing infectious relapses.

Actually the main justification for a widespread campaign against syphilis is that it prevents damage in the later stages to the human mechanism. The great majority of the cases of primary and secondary syphilis are able to continue their routine responsibilities, that is, there is very little morbidity. The effort to find early syphilis and treat it properly is chiefly to prevent late syphilis.

A brief review of the pathologic-physiology and immunology of a syphilitic would give a clearer conception of what happens in the body during late syphilis. The Treponema pallida gains entrance through the skin or mucous membrane and begins to multiply. They spread about and into the lymphatic and blood vessels, quickly stimulating a mild local reaction and producing a septicemia. The local reaction is characterized by edema, a cellular exudate, multiplication of fibrous tissue cells and a thickening of the vessel walls. The organisms reaching the blood stream are scattered to all parts of the body and there in turn are produced the same types of

local reactions. After a period of 14-120 days, a recognizable lesion may appear. This is the chancre or secondaries or both.

It is true that these recognizable lesions may not always appear either because of their insignificance, inaccessibility or absence. Many people have acquired syphilis and are not aware of it. Many physicians examine patients with various complaints who have syphilis without knowing it and should therefore do routine serological tests on every patient. Accidental infections from intermediate objects, a cough or sneeze in the face or other contact with germs are frequent.

The Treponemata which have spread to the tissues start the same kind of pathologic reaction. Here as in the first stages of the infection, the tissues attempt to protect themselves by resisting the parasite. The resistance though is only partially complete in syphilis. The organisms may disappear or subside in many foci, then the body's defence relaxes and there is a local or general relapse. Again the cycle of reproduction, tissue reaction, resistance and relapse occurs. The functioning cells of the tissue are gradualy replaced by fibrous cells or scar formation. As Stokes says, the syphilitic continues to live on his "parenchymatous reserve".

Damage to the organs or parts of organs occurs as a result of scar formation, occlusion or weakening of blood vessels or a hypersensitiveness of the cells to the infecting agent. The latter along with circulatory damage produces the gummatous lesion.

No tissue of the body is exempt from the effect of the Treponema pallida. The clinician then may find abnormality anywhere from the "crown of the head to the soles of the feet". A recital of the structures of the body with these types of changes would be the possibilities of late syphilis. This would require much time and many volumes.

With this background one can appreciate the truthfulness of Osler's recommendation to medical students, "know syphilis in all its manifestations and relations and all other things clinical will be added unto you." In individual cases the predominating pathological changes vary. The nervous system is one of the favorite locations. The heart and large blood vessels, liver, lungs, stomach, intestines, spleen, pancreas, skin, bones, cartilages, muscles, tendons, joints, blood forming organs, lymph glands, mediastinum, fetus in the uterus, ovaries, testes, endocrine organs, eyes, other special sense organs, etc., etc., may be affected.

Syphilis is usually a slowly progressing disease. There follows an illustration of the hazards of this infection. Many other illustrations could be cited but this one emphasizes a number of practical angles from the social, medical and economic viewpoints of human welfare. The disabling period of a syphilitic infection so often occurs at the time when the individual is carrying his greatest responsibilities and when he is most capable of accomplishment. An individual at approximately the age of eighteen during the period of little discretion had what was thought to be an insignificant lesion. There followed inadequate or irregular treatment. The patient seemed to be in perfect health soon after. He goes through the period of irresponsibility, becomes an important force for good in the community. He may have inherited an estate to which additions have been made by his own ability. He has established his own home, become a husband and father. This usually requires about twenty years. This patient then begins to complain of substernal pain on exertion but routine medical examination reveals nothing abnormal. No Wassermann test is taken. One to two years later after a gradual increase in disability, the patient becomes incapacitated because of syphilitic heart disease. There may be an aneurysm of the aorta, partial occlusion of the coronary arteries and myocardial damage. No treatment at this stage is effective. Six months later in his early 40's this patient dies. Proper diagnosis and adequate early treatment would have prevented this. It is also just as true that the discovery of this patient's disease by routine serologic tests before irreparabe damage had been done and proper treatment would have prevented such an outcome.

The outcome in late syphilis does not always have such an unfavorable outlook. Many cases even in the late stages where other tissues are involved predominantly can be improved and some cured.

The most effective way to detect the hidden syphilis is the routine use of serologic tests. Every member of the population regardless of age, race, sex or social standing should have these serologic tests.

The progressing campaign against this "greatest killer of man" had already made the basic facts about the incidence, morbidity, mortality, mental agony, upset families, economic phases, etc., well known. It is also well known that scientific knowl-

edge is available for eradicating this malady and that the cost of doing so is not overwhelming. We should not defer the possibility of improving the human race by neglecting to vigorously combat this preventable infection. There would result a great saving from the point of view of dollars and cents both on the part of individuals, their families and the government. Industry could improve output, prevent accidents, and in many ways benefit by the eradication of syphilis. It will be money well spent to appropriate sufficient funds to eradicate this infection.

"Found: A One Day Cure for Syphilis"

In the *Reader's Digest* for September appears an article by Paul de Kruif entitled "Found: A One Day Cure for Syphilis," heralded by the editors of that periodical as "the medical sensation of the year." In this article Mr. de Kruif states that "now there actually is promise of a one day cure." He asserts without, of course, any basis in fact that "the standard eighteen month course of treatment is too painful, too dangerous, too prolonged for the mass cure of early syphilis." After describing certain experiments conducted by Drs. Walter M. Simpson, H. Worley Kendell and Donald L. Rose in the Miami Valley Hospital, he concludes:

> With a one day cure available, with plenty of doctors and nurses trained in fever therapy, and using equipment which costs little war material, we ought really to begin to wipe out the horror of syphilis. There are a million active cases in the United States. With this powerful new treatment, all persons found infected with active syphilis could be taken out of circulation and their danger to the community quickly abolished. The immediate expansion of this chemothermic treatment should bring hope to those countless hundreds of thousands who are inadequately treated or who are not treated at all. In the meantime, all those now under standard treatment should continue it until the new chemothermic treatment becomes generally available; this for their own as well as for the public safety.

As nearly as can be determined, all this effusion is based on a few paragraphs from an article on fever therapy by Drs. Walter M. Simpson, H. Worley Kendell and Donald Rose, published in the *British Journal of Venereal Diseases* for January-April 1941, in which the authors state:

> The present plan of treatment is as follows: A ten hour session of fever at 106 F. (41.1 C.) has been adopted tentatively as the initial unit of fever, since these limits have proved to be safe and practical in the management of patients with refractory gonococcic infection. Prior to the fever session a single injection of 4 grains of insoluble bismuth is administered intramuscularly. During the first seven hours of the height of fever, 240 mg. of mapharsen are administered intravenously by the slow intravenous drip method. No additional antisyphilitic therapy is given.

To this they append the following highly conservative opinion:

> While no conclusions are permissible since the period of post-therapy observation is as yet less than two years, the prompt resolution of clinical symptoms and the favorable serologic responses would indicate that further diligent inquiry is demanded. The results of this purely experimental undertaking will be made the subject of a later report.

In their ultimate "conclusions" they say:

> At the present time such treatment should be considered strictly experimental.
>
> The results achieved thus far should stimulate other investigators to engage in long term, controlled experiments with a view to the introduction of a more rapid, more certain, less dangerous and less costly method of treatment.

In a review of syphilis to appear soon in the *Archives of Internal Medicine,* Drs. Frank W. Reynolds, Charles F. Mohr and Joseph Earle Moore of Baltimore say:

> With his usual uncritical judgment, hyperenthusiasm and willingness prematurely to capitalize journalistically on sober scientific experimentation, de Kruif has unhappily drawn nationwide attention to this "one day cure" for syphilis. This tendency of medical journalists to raise false hopes in lay minds can only be deplored. With all due respect to democratic freedom of speech, it is too bad that no censorship exists to compel conservative accuracy from medical sensationalists.

This is another instance in which Mr. de Kruif has expanded preliminary medical investigations into announcements to the public that go far beyond anything that the available evidence could warrant. *The Journal* is being deluged with letters from physicians indicating that the article already is doing great harm in creating dissatisfaction among persons with syphilis as to time that may be required to bring about cure. Dr. Walter M. Simpson is an officer in the Bureau of Medicine and Surgery of the United States Navy and has been for some months away from contact with the continental United States. It is unfortunate that in his absence the statements of Mr. Paul de Kruif should have placed him and his research in such an unenviable position before the medical profession. — (*Editorial J.A.M.A.,* Sept. 5, 1942.)

MENTAL HYGIENE ACTIVITIES

The Purpose and Program of the Mental Hygiene Society of Virginia*.

The development of the mental hygiene movement in Virginia has taken place within the past forty years. The groundwork had, of course, been laid in previous years. The period between 1875 and 1900 was especially fruitful. It may be said, however, that modern psychiatry, and the beginnings of the broader aspects of mental health protection began almost exactly one hundred years ago, at about the time of the organization of the Association of Hospital Superintendents in 1844, and the beginning of the work of Dorothea Dix in 1841. Great advances were made in the twenty years from 1841 to 1861. War came and put an end to all of this, and for many years matters pertaining to the care of the insane and for mental health in general were almost forgotten. Especially was this true in the South.

As in 1841 when a New England school teacher, Dorothea Dix, gave the impetus for a great movement, so in the early years of the twentieth century a layman and young business man did likewise. The current chapter of the modern mental hygiene movement actually began when Clifford Beers entered a mental hospital as a patient in 1900.

In Virginia in that same year Dr. William F. Drewry, that incomparable psychiatrist and hospital administrator, was one of the sponsors in the organization of the Virginia Conference of Charities and Corrections, now known as the Virginia Conference of Social Work. Even though this State has been backward and slow in its acceptance of this modern mental hygiene movement, it can be said that Dr. Drewry and a few others left no stone unturned to keep this matter continuously before the people and those who had to do with making the laws for social welfare.

Mental health programs have been a large part of the work of this Conference. This phase of its work continued to grow to such an extent until in 1936 a committee was appointed to make plans for the organization of an independent mental hygiene group. So it was that on February 19, 1937, the Mental Hygiene Society of Virginia came into being with Dr. Beverley R. Tucker as its first president.

The objectives or purposes of the Society are the same now as they were five years ago except that the concept of some of them has been broadened and intensified. No opportunity has ever been lost to preach and teach mental hygiene to the people of Virginia. A restatement of these objectives is as follows:

1. Promoting a general recognition of the true nature and the established causes of mental disease and defect.
2. Advancing the methods of treatment and prevention.
3. Rationalizing and harmonizing the public attitude towards mental disease and hospitalization.
4. Securing suitable mental health legislation.
5. Working concurrently with Federal, State, local and private agencies in matters relating to mental health.

The Society was organized under the sponsorship of the National Committee for Mental Hygiene for the purpose of cooperating with other similar societies and groups now numbering over sixty throughout the country, in matters pertaining to mental health.

It is thought by many that because of the immensity of this problem and the slowness of apparent, effective and positive results, the average person and even some psychiatrists become discouraged and lose much of the interest and enthusiasm which they may have had. On the other hand it would seem that even the knowledge that this situation exists would challenge the best in every person who may be at all acquainted with the facts. Some of the reasons why the mental hygiene movement came into being and why the Mental Hygiene Society of Virginia is in existence are as follows:

1. There are over 650,000 mentally diseased and mentally defective patients under the care of mental institutions in the United States.
2. Over 50 per cent of all hospital beds in the United States are occupied by mental patients.
3. There are approximately 120,000 admissions to these institutions each year.
4. The net increase per year is approximately 20,000.

*Notes taken from a paper read before a regional meeting of the Mental Hygiene Society of Virginia at Marion, July 18, 1942.

5. The actual cost for maintaining mental institutions, considering capital invested and actual operating costs, may exceed $300,000,000 per year.
6. Capital invested in buildings and equipment, if averaged at only $1,500 per patient, would be well over one billion dollars.
7. The economic loss of mental disease and mental defect is almost incalculable but it would be well over another billion dollars in a single year.
8. The expectation for the future based on the present rate of admissions means that one out of every twenty-two persons living today will at some time be a patient in a mental hospital.
9. Viewing it from another angle, over 1,000,000 of the boys and girls now in our public schools may be expected to spend some portion of their lives in an institution for mental disease.
10. It is estimated that one out of every hundred of our public school children is afflicted with speech defects of some kind, such as, delayed talking or stammering, most of which are largely mental problems.
11. Of approximately 13,500,000 children in our country under five years of age, one third will show behavior difficulties of the kind treated in child guidance clinics; such as tantrums, nervousness, retardation, and the like.
12. Last but by no means least is the distress, and often heart-breaking situations, occurring in thousands of families and to other thousands of friends of those who are afflicted.

What is Virginia doing and what are we going to do to see that the mental health of our people may begin to take its place alongside the great progress which has been made in physical health?

1. Much has been done in the past five years in the improvement of treatment standards and the physical equipment of our State hospitals, but only a beginning has been made and the real job is still ahead. The Mental Hygiene Society of Virginia should place this as a number one item on their agenda and see that steps are taken by the proper authorities at the proper time to make our institutions treatment and training centers rather than for mere custodial care.
2. Coupled with this and the most important part of this No. 1 item is the matter of an adequate and trained hospital personnel, which would include physicians, nurses, attendants, occupational and recreational therapists, dietitians, social workers, and all the others needed for a modern treatment hospital. Virginia has never had anything approaching this, and now is a good time to at least be planning for it. First is need for physicians who are psychiatrists, and some close cooperation should be indulged in in this respect between our hospitals and the medical schools, not only with those in this State, but elsewhere. Next would be the matter of nurses who would be psychiatric nurses. Here again close cooperation with schools of nursing in general hospitals may be a good thing by offering accredited affiliate work in the State hospitals. One or more of the State hospitals should have nurse training schools. The ward attendant in a State hospital is the person who lives with and knows the patient better than anyone else. It is he that can do more for the patient either for ill or good than anyone on the hospital staff. This is a matter of extreme importance and emphasizes the need for continuous and intensive training.
3. At the instance of the friends of the mental hygiene program who were interested in its enlargement in Virginia, Senate Bill No. 141, now known as Chapter 160, Acts of the General Assembly, was introduced and passed. It authorizes the State Hospital Board, through the newly created Department of Mental Hygiene and Hospitals, to do the following:
    1. To establish and maintain out-patient clinics for the following purposes:
        a. To advise, counsel, direct and treat patients on furlough or parole from the hospitals or colonies.
        b. To extend these services to such former patients as may make application therefor.
        c. To extend these services to such other persons in need of psychiatric advice, counsel and guidance as may be referred by physicians or

by any public health or welfare agency.

2. To seek and encourage the cooperation and active participation of communities, organizations, agencies, and individuals in the effort to establish and maintain mental health programs and services.
3. Initiate and develop long range programs and plans with respect to mental hygiene and hospitals.
4. Develop programs of public information and education for the purpose of promoting an understanding and appreciation of State mental hygiene and hospital services.

This is the first time that the State of Virginia has ever placed on its statute books any law authorizing mental hygiene work outside the mental institutions. The Bureau of Mental Hygiene in the Department of Public Welfare has been in operation since 1928; but even though it was given the status of a bureau and performed a limited amount of outside clinical services, it has actually been part and parcel of the Children's Bureau of the same Department and has never held any specific legal status. The budget act for 1942-44 for the State Department of Public Welfare eliminates the "Bureau" status and actually makes it an integral part of the Children's Bureau.

This clinic, and the one connected with the University of Virginia Hospital and another with the Medical College of Virginia are the only efforts being made by the State in the field of prevention in the mental hygiene program. Outside of a very few private practitioners, the only other effort in this direction is the Children's Memorial Clinic in Richmond.

It is clear, therefore, that the crying need for Virginia is a well planned State-community effort directed towards the organization and maintenance of a State-wide system of mental health clinics, radiating from the various State hospitals and two medical schools. This effort should be directed by the Department of Mental Hygiene and Hospitals, which has already made a good beginning by making Dr. Joseph E. Barrett State Out-patient Clinic Supervisor, and has estalished several clinics in southwest Virginia. The success of the work of these clinics may be partially proven by one simple fact and that is the patient population of the Southwestern State Hospital is no greater now than it was four years ago. By this supervision in the clinics many persons are able to live happier and more useful lives at home than would be true if they were in the institution. Other cooperating agencies should be the State and local welfare and health departments, the State Board of Education and local school authorities, State and local medical societies, and the private practitioner. All of these and many more should begin now to make plans to strengthen the whole mental hygiene effort so as to make it impossible for the Legislature to refuse to appropriate the necessary funds for the execution of an effective, comprehensive, Statewide mental hygiene program.

F. W. GWALTNEY, *Executive Secretary.*

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was an eighteen-year-old colored woman who had had two previous pregnancies. During the present pregnancy she had had no prenatal care. She was seen at term by a midwife after having had three or four convulsions. A stillborn macerated infant was delivered soon after the arrival of the midwife. The family stated that she had had headaches, spots before her eyes, ringing in her ears and pain in the upper part of the abdomen as well as swelling of the hands, face, and feet. Convulsions had appeared about twelve hours before the arrival of the midwife. Convulsions and coma continued postpartum and she was seen by a physician the following day who gave magnesium sulphate intravenously and morphine gr. one-fourth. The patient died thirty-six hours postpartum.

COMMENT

This is classified as a preventable obstetrical death because of total absence of prenatal care and the failure to employ any effective therapy for eclampsia after convulsions occurred. Adequate prenatal examinations with a reasonably intelligent interpretation of the findings would have detected the impending eclampsia and would have indicated immediate hospitalization, before convulsions appeared. After convulsions appeared the patient should have been referred to a hospital for adequate eclamptic therapy. Because of these failures this has been classified as a preventable death.

Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for August 1942, compared with the same month in 1941, and for the period of January through August 1942, compared with the same period in 1941 follows:

	Aug. 1942	Aug. 1941	Jan.-Aug. 1942	Jan.-Aug. 1941
Typhoid and Paratyphoid Fever	55	35	155	132
Diarrhea and Dysentery	1,321	1,508	3,400	3,141
Measles	38	1,051	4,786	34,516
Scarlet Fever	44	53	781	961
Diphtheria	37	35	273	261
Poliomyelitis	8	28	21	50
Meningitis	7	13	124	80
Undulant Fever	5	1	22	8
Rocky Mountain Spotted Fever	16	9	41	24
Tularaemia	5	2	32	21

TYPHOID CARRIERS

For the past 20 years patients recovering from typhoid fever and suspected of being carriers have been reported to the Virginia State Health Department. All persons with no clinical history or an atypical febrile stage, but having positive cultures, have been added to this list. In the investigation of typhoid fever occurring sporadically in Virginia, these carriers are regarded as a probable source of infection in the locality in which they reside.

In 1941 the Bureau of Communicable Diseases instituted an intensive campaign to locate all proven carriers and persons who were suspected of being carriers within the boundaries of the State to determine their ability to spread typhoid fever by isolating the organism.

Approximately three per cent of those who have had typhoid fever remain carriers of the bacillus. Not all counties in the State show the presence of a carrier. However, it is realized that with the number of typhoid fever cases occurring annually, carriers permanent or transient must exist. It is necessary for the Health Department to determine the address and occupation of the carrier. The occupation at the time of discovery is of importance epidemiologically in tracing the route means of infection. Some of the histories obtained on these people go back 20 years and have been intermittently augmented when outbreaks of typhoid occurred in their family or close contacts.

Children as young as four years of age along with octogenarians have been found to harbor the organism. The laboratory tests made over a period of years have shown the showering out of typhoid bacilli in certain cases and seemingly a continuous discharge of the bacilli in other carriers. In reviewing the family roster of many cases it has been found that often those who have received typhoid vaccine, even years before, were those in the carrier's family who escaped the disease.

In counties having a local health organization, the health officer has a list of those who reside in his jurisdiction; periodically these persons are visited and instructed in personal hygienic measures. In the counties that do not have a full-time health service, a representative of the State Health Department in Richmond contacts the carriers and follows the same procedure. Not only are personal hygienic measures stressed, but the importance of sanitary measures, screening, and the care of handling food are emphasized.

The Virginia State Health Department intends to instruct children who carry the bacillus as intensively in personal hygiene as they receive instruction in school to read and write. This procedure is difficult but it is thought to be sufficiently important to merit the additional expenditure of time and effort.

Information from other states that a carrier possibly exists in a community is immediately investigated. In reciprocation, the State of Virginia notifies and requests information from the health authorities of other states as to the possibility of a citizen of the Commonwealth of Virginia contracting typhoid fever outside of the State boundaries.

At the present, of the 87 known carriers in Virginia, the residence of 52 has been verified within the past year, 10 the investigators were unable to locate, 22 have not been verified, and the remaining three probably are not carriers Of the 52 known carriers on whom recent histories were obtained, seven had resorted to surgical intervention.

Military Medicine

Virginia Doctors in Service
Supplement 2

In keeping with our policy to have a complete record of Virginia doctors in the various branches of the Services, we give herewith a second Supplement to the list in the July, 1942, issue. Names are given alphabetically with home addresses as it is impossible to keep up with the changes in the rank and Service.

We will appreciate having any reader advise of names that have been omitted.

MEMBERS OF MEDICAL SOCIETY OF VIRGINIA

Dr. John E. Alexander, Evansville, Ind.
Dr. D. L. Arey, Danville.
Dr. Robley D. Bates, Jr., Richmond.
Dr. Erwin S. Berlin, Wytheville.
Dr. John M. Bishop, Roanoke.
Dr. William F. Bryce, Richmond.
Dr. J. Lawson Cabaniss, Roanoke.
Dr. W. D. Chase, McLean.
Dr. Robert F. Cline, Winchester.
Dr. Algernon C. Davis, Roanoke.
Dr. William E. Dickerson, Danville.
Dr. Jerome Feldman, Richmond.
Dr. W. P. Frazer, Hamilton.
Dr. J. Arthur Gallant, Richmond.
Dr. James R. Grinels, Richmond.
Dr. Max L. Holland, Roanoke.
Dr. Thomas J. Humphries, Roanoke.
Dr. A. S. Hurt, Jr., Richmond.
Dr. E. C. Jamison, Rocky Mount.
Dr. Joseph Bernard Jones, Culpeper.
Dr. Benjamin M. Kagan, Richmond.
Dr. J. L. Kinzie, Salem.
Dr. Edmund LaPrade, Richmond.
Dr. Henry Lee, Roanoke.
Dr. Theodore B. McCord, Fairfax.
Dr. E. Berkeley Neal, Roanoke.
Dr. Thomas E. Painter, Pulaski.
Dr. William O. Porter, Roanoke.
Dr. C. L. Riley, Winchester.
Dr. Edwin M. Rucker, Richmond.
Dr. Andrew D. Shapiro, Roanoke.
Dr. Louis B. Sheppard, Richmond.
Dr. William C. Stephenson, Roanoke.
Dr. C. C. Trice, Richmond.
Dr. Harry J. Warthen, Richmond.
Dr. Ennion S. Williams, Richmond.
Dr. Mortimer H. Williams, Roanoke.
Dr. Munford R. Yates, Petersburg.

NON-MEMBERS

Dr. Felix Feamster, Lexington.
Dr. A. K. Jacob, Roanoke.
Dr. M. A. Johnson, III, Roanoke.
Dr. Wiley D. Lewis, Radford.
Dr. M. H. McClintic, Roanoke.
Dr. John Hope Moorman, Jr., Conicville.
Dr. Harold L. Nemuth, Richmond.
Dr. Roland Robertson, Roanoke.
Dr. Hugh H. Trout, Jr., Roanoke.
Dr. Philip Trout, Roanoke.
Dr. Gilman R. Tyler, Richmond.

Appreciation of Col. Sam F. Seeley.

The Directing Board of the Procurement and Assignment Service for Physicians, Dentists, and Veterinarians, has formally expressed its appreciation of the services rendered by Colonel Sam F. Seeley, who has been transferred to military duty. Following is the text of the resolution adopted:

"The transfer of Lieutenant Colonel Sam F. Seeley from his connection with the Procurement and Assignment Service to active military duty causes a great loss. Colonel Seeley who has acted as Executive Officer since the beginning of this Service has been transferred to military duty, which is in keeping with the policy recently adopted by the War Department. His training and experience with the Medical Corps of the Army in his professional capacity amply justifies such a step.

"The Directing Board of the Procurement and Assignment Service wishes to take this opportunity of expressing to the Surgeon General of the United States Army its very deep appreciation for the valuable service which Colonel Seeley has rendered during its period of organization and functions.

"The Directing Board expresses to Colonel Seeley its deep appreciation for the great sacrifice which he has made in dislocating himself from actual military duty to serve with us in an executive capacity. He has been most unselfish, and has given unstintingly of his time, energy, and patience in helping to solve many of the problems connected with the functioning of the Procurement and Assignment Service. He has not only labored faithfully at our office in Washington, but he has traveled over the United States contacting many of his professional confreres and explaining to them the purpose for which the Procurement and Assignment Service was organized. His services have been most valuable and have helped to take us a long way in accomplishing the objectives for which it was created.

"The Directing Board expresses to Colonel Seeley its gratitude and thanks for his unselfish devotion to the organization of the Procurement and Assignment Service and wishes for him the greatest success in his new assignment.

"FRANK H. LAHEY, M.D., *Chairman*
HARVEY B. STONE, M.D.
HAROLD S. DIEHL, M.D.
JAMES E. PAULLIN, M.D.
C. WILLARD CAMALIER, D.D.S."

Book Announcements

Heredity, Food, and Environment in the Nutrition of Infants and Children. GEORGE DOW SCOTT, A.B., B.S., M.D., Consulting Pediatrician to the Lutheran Hospital, New York City, and to the Nassau Hospital, Mineola, L. I., N. Y.; etc. Boston. Chapman and Grimes. 1942. xvii-778 pages. Cloth. Price $5.00.

This is an extraordinary book. It contains the best recipes for stuffed green peppers, pilaf, and zabione of any book on pediatric nutrition I have read. It also offers food for thought to many branches of the medical profession. For instance, the pediatrician will doubtless be interested in learning on page 3; "Up to the present moment, no method of certainty is known for measuring the rate of metabolism except from the child's actions, from his color, etc."; that "This united vigor in the parents depends naturally on their rate of metabolism at time of copulation. . . ."; and that "If the constitution of both parents is at low ebb, paticularly at the time of copulation, the initial strength of the new-born may be weak and pitiful." On page 99 he will also find: "Pediatricians often lend an ear to controversies which arise from time to time as to whether the effects of syphilitic toxins upon the germ plasm can be transmitted over one generation. Such lengthened transmissions, however, appear to be a fact."

The zoologist will learn (p. 4) that "The outward expression of energy is seen in different animals as different colors." and (p. 20) that "Huxley, the biologist, says that male children have one less chromosome than do females."

The pharmacologist will probably wish to read (p. 61): "Thus, for example, digitalis increases the excitability of the receptor fibril of the vagus, while atropin decreases the excitability of the receptor fibril of the vagus and decreases the excitability of the discharging fibrils." On page 104 he will learn "However, nicotine, a very volatile substance, is destroyed in the burning of the tobacco and rarely if ever passes to the body of the smoker."

As a physiologist I was impressed with the statement (p. 61): "When a cell normally performs its functions, when it contracts it discharges an impulse at the same time. This combination of functions is found, for example, in the auriculo-ventricular bundle of the heart. The skin, too, is composed of a great mass of living cells and when a light body or rays of sunshine strike it the cells are stimulated to activity and pass on impulses which travel from cell to cell until the receptor fibrils of the afferent nerves are reached."

The internist will be grateful for the following explanation of appendicitis (p. 132): "This means that the muscular fibers in the mucosa and submucosa are prevented from reacting normally and the mouth of the appendix, instead of being tightly closed, becomes relaxed. In this event it is merely a matter of time for the bacteria in the passing fecal excretion, a part of which drops into the lumen, to become implanted within the body of the appendix."

However, it is the biochemist who will probably learn for the first time (p. 62) that the liver ". . . . absorbs the amino acids of the dissolved protein molecules and combines them with ammonia producing urea and uric acid."; "The kidney cell builds urea from the blood . . . ."; "The poisons given off in the intestines in digesting protein, such as carbonic acid, it accumulates within itself, rendering them harmless by uniting them with sulphuric acid." On page 147 he will discover: "The total carbon-dioxide content of the whole blood is decreased in conditions of non-gaseous acidosis and of non-gaseous alkalosis."

Nor is the bacteriologist slighted, for it is doubtless for his benefit that we find on page 107: "It has been determined also that any of sixty kinds of organisms may be attached to their (flies') bodies. In this list may be mentioned scarlet fever and the familiar but now rare disease, leprosy." And on page 376 he will find that boiling is recommended in cooking fish "since it effectively guards against furunculosis, worms, and perhaps tuberculosis."

The experimetal nutritionist should read (p. 113) that "Guinea pigs readily show the effect of a deficiency of vitamin C, and rats of vitamin A, and to a less extent, vitamin C."

The strain of learning so many novel and startling facts however, was too much for the simple mind of the reviewer, and he was able to cover no more than 150 pages. It is to be heartily regretted that this volume contains no pictures.

R. J. MAIN.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, $2.00. Single Copies 25c.

VOL. 69. OCTOBER, 1942. No. 10

Editorials

Sister Kenny's Method

FROM the number of enthusiastic reports that are now appearing in the literature it is hard to believe that less than two years have passed since Miss Kenny's ideas were being pooh-poohed by four out of five experts to whom she appealed for help. It was difficult for physicians to grasp the fact that a nurse, unacquainted with the anterior horn cells of the cord and with the lesions in and around them that characterize the chief pathology of anterior poliomyelitis, a nurse who did not even have the vocabulary to express her new ideas, should have made clinical observations that could upset an important part of the old symptomatology and treatment of this dread disease upon which so many trained physicians and research men had labored for so long with so little result.

Formerly it was held that a flaccid paralysis, without spasm or incoordination, characterized the acute stage of anterior poliomyelitis, and clinicians lost no time calling in orthopedic consultants, who routinely applied splints in an effort to avoid the deformities which they had learned to expect. Miss Kenny's observations, now abundantly confirmed, have changed all this. A new symptomatology has come to be recognized which can be summarized briefly as including muscle spasm, muscle incoordination and mental alienation.

Splints have become taboo, and hot fomentations to spastic muscles, passive motion and muscle re-education constitute the distinctive features of the new treatment. As a result pain and suffering have been almost abolished and deformity is unheard of. The inelastic, fibrosed and shortened muscles which characterized the disease under the earlier treatment are not seen when this method is used. Muscles are now flexible, soft and receptive. Warm extremities replace the cold, clammy hands and feet with which we have been familiar in the past. Stiff and deformed joints do not result. Instead joints have full, free motion.

Sister Kenny's method does not cure, but possibly limits the extent of paralysis, and by the relief of suffering and the prevention of deformity represents a welcome advance in the management of the victims of one of the worst diseases man is heir to.

It is to the credit of the University of Minnesota and the Minneapolis General Hospital that they thought enough of Miss Kenny's ideas to give them a trial when other medical centers showed no interest in her unorthodox concepts. It is to the credit of members of the profession in a number of other medical centers who followed suit when her plan of treatment was better understood. It is pleasing to note that the Department of Orthopedics of the University of Virginia sent Dr. Charles J. Frankel to Minneapolis to observe, and that he has returned prepared to spread the gospel of a plan of treatment which offers so much more than the older methods.

Dr. Frankel writes: ". . . every physician in the state, who has occasion to see the early cases of poliomyelitis, should become acquainted at least with the principles of the Method. Attention must be drawn to the fact that early treatment is important to insure good results. It is also imporant to emphasize that the treatment is not merely the application of hot foments, but more important is the muscle re-education which must be carried out by a physiotherapist, fully trained in the correct method. Halfway measures will be disappointing. Without the fully trained physiotherapist the treatment has only small value." Dr. Frankel also reminds us that the short clinics which are to be held throughout the state (in Richmond, Roanoke, Charlottesville and Norfolk), while they may be instructive, are certainly not able to train thoroughly the personnel necessary to the treatment of the disease.

It is agreed that in the light of our present knowledge of the physiology and pathology of poliomyelitis, the Kenny treatment is purely empirical. A good deal of research work has been and will be stimulated as the method becomes better known throughout the country.

It is important that someone in every community where poliomyelitis is taken care of should familiarize himself with these new methods. It is hoped that other physicians from this state will go to Minneapolis, or perhaps to the University of Virginia where they can see the method in actual operation.

Post Anesthesia Encephalopathies

IT has often been said that if one had to choose between a good surgeon and a poor anesthetist and a good anesthetist and a poor surgeon he would do well to accept the first alternative. This judgment still holds true in spite of the fact that modern anesthesia is apparently attended with so few untoward effects. It may honestly be said that anesthesia is far from being a perfectly safe procedure. If one doubts this, all one has to do is to look through the *Index Medicus* with an eye to the number of deaths and complications listed under this heading.

There is a type of accident which may occur during anesthesia which was discussed extensively in British medical literature about fifteen years ago, and which has had some attention given it by recent American authors. We refer to anoxia. Cyril Courville's monographic article which appeared in the May, 1936, *Medicine* reviews the literature and reports thirteen cases of "asphyxia complicating nitrous oxide anesthesia." Roy McClure and his associates reported to the American Surgical Association at its 1939 meeting at Hot Springs four similar cases, in two of which nitrous oxide had apparently not been given. These authors emphasize preoperative administration of morphine and the barbiturates as important contributive factors. The untoward effects of anesthesia, particularly of nitrous oxide anesthesia, to which we wish to call attention, are generally believed to be the result of temporary anoxia with the

brain receiving the brunt of the injury. The pathologic physiology of these episodes has been now broken down into a number of morbid stages—anoxic anoxia, stagnant anoxia, anemic anoxia, and histotoxic anoxia. Any one or all four may be encountered. The fault may lie in an oxygen deficiency, arising especially during nitrous oxide anesthesia, where the margin of safety is narrow, and where arterial oxygen tension may suddenly be reduced to the point where the respiratory center is dangerously depressed. The machine, the drug or the anesthetist may be at fault. On the other hand a preexisting anemia may produce a deficiency in the oxygen carrying power of the blood. Injudicious preoperative sedation, especially with the barbiturates, is capable of damaging the cerebral cells, producing a local tissue injury which interferes with their utilization of available oxygen. When a cardiorespiratory collapse is superimposed upon such a background, cellular injury or death from lack of oxygen supervenes with dramatic suddenness.

This chain of circumstances may be responsible for convulsions during anesthesia, for delayed return of consciousness with or without residual symptoms, or for death suddenly or in coma. In other instances none of these effects may be observed immediately, and yet delayed effects may manifest themselves, such as inability to concentrate, loss of memory, as well as various emotional states. These after-effects may be so slow in coming on and are often so slight that they may not be attributed to the aesthesia which provoked them. We do not know of any studies which have been made to discover the full extent of these delayed effects on the brain and its function in persons who have undergone anesthesia. The problem is serious enough, however, to compel surgeons and anesthetists to take stock of themselves, to familiarize themselves thoroughly with the physiologic mechanisms involved in supplying oxygen to the brain and other tissues during anesthesia, to give more consideration to the red blood count of the preoperative patient, to keep preanesthesia sedation within reasonable limits, to be prepared to meet circulatory collapse in the operating room and to be sure that adequate oxygen tension is maintained throughout the administration of the anesthesia.

Keeping Up With the March of Medicine

THE problem of keeping up with medical progress is an old one. The earliest medical journals published in Virginia featured prominently articles attempting to portray the advance of a science which was even then getting beyond the ability of one man to follow. Massed abstracts, special articles and the Year Books have been recent methods of epitomizing our vast medical literature. Within the last month two worthwhile publications have appeared, each designed to portray in a reasonably limited space advances in medicine.

The first is a 292 page volume from the Interscience Publishers, Inc., edited by J. Murray Steele, M.D., of New York. It appears under the title of *Advances in Internal Medicine.* Ten contributors center our attention upon the following advances: the Miller-Abbott tube in the diagnosis and treatment of disorders of the gastrointestinal tract, the use of insulin and protamine zinc insulin, sympathetic nervous control of the peripheral vascular system, the sulfonamides, urinary tract infections, epidemic influenza, the pathogenesis and treatment of hypertension, nephrosis and ariboflavinosis.

The other volume, *Medical Progress Annual,* published by Charles C. Thomas and edited by Robert N. Nye, M.D., is the third of this series to appear. The present volume consists of fifty-two reports on recent accepted advances in diagnosis and treatment, published during the year 1941 in the *New England Journal of Medicine,* and

now brought together by its managing editor under one binding. This is a much more comprehensive review, covering as it does 677 pages. Here one will find the latest concepts of drug allergy, anesthesia, diseases of the peripheral arteries and aviation medicine. Bacteriology, blood chemistry, cardiology, dehydration, dental caries, diabetes and edema are discussed in separate articles. Virus encephalitis, the rôle of the adrenal cortex, endoscopy, the treatment of biliary tract disease, hematology, industrial hygiene, kidney disease, the treatment of meningitis and of pneumonia, neurology and neurosurgery, nutrition and the medical aspects of obstetrics are other chapter headings. Ophthalmology, pathology, pediatrics, pharmacology, physiology and psychiatry are also discussed in separate chapters, indicating the broad base upon which the summary is constructed. Particular interest attaches to those sections of the book which deal with the plasma proteins, diagnostic roentgenology, antipneumococcus serum, the vitamins, and war medicine. There are chapters devoted to tuberculosis, syphilis, thoracic surgery, abdominal surgery, as well as to surgery of the sympathetic nervous system, surgical care and operative technique and surgical shock.

If some physician feels that the medical events of the last year have moved too fast for him, let him take a few days to read these two excellent books. He will then be assured of having his knowledge brought up to date in good fashion and without having been bored in the process.

Societies

The Fairfax County Medical Society

Held its annual meeting on August 11, at the home of Dr. William Meyer in Herndon, with several visitors present. During the business session, the medical defense organization of the county was discussed and the following were elected officers of the Society for the coming year: President, Dr. Elmer Waring of Fairfax; vice-president, Dr. Charles Finnegan of Falls Church; secretary, Dr. Alice Heyl Kiessling (re-elected) of Falls Church; and treasurer, Dr. Emmanuel Newman of Falls Church. Following the meeting, the members and guests adjourned to the old Dranesville Tavern where dinner was served.

Nelson County Medical Society.

At a special meeting of this Society on August the 20th, Dr. Lyddane Miller of Amherst was elected president; Dr. Homer E. Clarke of Massies Mill vice-president; and Dr. J. F. Thaxton of Tye River was re-elected secretary-treasurer. The President's appointment of delegate and alternate to the meeting of the Medical Society of Virginia were affirmed. Other business was a consideration of how to increase the membership and usefulness of the society.

The Wise County Medical Society

Held its regular bi-monthly meeting on September the 4th at Coeburn, starting with a dinner at the Community Club House, as guests of the local doctors. Dr. Joseph R. Blalock, superintendent of Southwestern State Hospital at Marion, was guest speaker, and was introduced by Dr. Bowyer, at request of the president, Dr. W. B. Barton. There was also a motion picture in color on the subject of "Riboflavin Deficiency". Dr. Seymour Pelzer of Calvin was admitted to membership. Dr. C. L. Harshbarger of Norton is secretary.

News

The State Meeting.

The Medical Society of Virginia is holding its Annual Meeting in Roanoke, beginning Monday, October the 5th, and it is not yet too late to get there and enjoy the program and meeting with friends. Oftentimes meetings are more enjoyable when one does not plan attendance too far in advance. The program is interesting and you should feel well repaid for taking this time from your work. All features of the meeting are to be at Hotel Roanoke.

Personnel Notes from State Health Department

Effective October 1, Halifax and Pittsylvania Counties will be consolidated under the supervision of Dr. D. C. Steelsmith. This unit will be known as the Halifax-Pittsylvania Health District, with headquarters at South Boston.

Dr. Samuel S. Shouse, Health Officer of the Page-Warren-Shenandoah Health District, was granted a leave of absence to enter military service, effective September 8. Dr. M. E. McRae, Health Officer of Pittsylvania County, succeeds Dr. Shouse in this District, October 1, and will have headquarters at Luray.

Dr. C. E. Waller, Health Officer of the Fairfax-Loudoun-Prince William-Stafford Health District, will be relieved of Fairfax, Prince William and Stafford Counties and will remain Health Officer of Loudoun County, effective October 1, with headquarters at Leesburg. He will be succeeded as Health Officer of Fairfax, Prince William, and Stafford Counties, by Dr. James A. Dolce of the U. S. Public Health Service. Dr. Dolce's headquarters will be at Fairfax, and this unit will be known as the Fairfax-Prince William-Stafford Health District.

Dr. E. W. Langs, Assistant Health Officer of the Fairfax-Loudoun-Prince William-Stafford Health District will be transferred to the Giles-Montgomery-Radford Health District as Assistant Health Officer, as of October 1, and will have headquarters at Christiansburg.

Dr. Daniel Hope, Jr., Health Officer of the Alleghany-Botetourt Health District resigned to enter military service, on September 16, and Dr. George C. Snead will take over this work with headquarters at Covington, effective October 16.

Dr. Robert M. Bryant, Jr., will become Assistant Health Officer in the Brunswick-Greensville-Mecklenburg Health District, October 1, and will be located at Lawrenceville.

Dr. Donald K. Freedman of the U. S. Public Health Service will become Assistant Health Officer of the Peninsula Health District, October 1, with headquarters at Hampton.

Dr. John L. Lincoln of the U. S. Public Health Service, recently at Hot Springs National Park, Ark., was assigned to the Hampton Roads Defense Area, Newport News, as Area Venereal Disease Control Officer, September 15.

Dr. Walter B. Quisenberry of the U. S. Public Health Service, also from Hot Springs, Ark., was assigned to the Camp Pickett Area, Farmville, as Area Venereal Disease Control Officer, on September 15.

Dr. Randolph P. Grimm of the U. S. Public Health Service was assigned to the Hampton Roads Defense Area, Norfolk, as Area Venereal Disease Control Officer, September 15.

Married.

Lt. (jg) John Paul Jones, MC., U.S.N.R., and Miss Elizabeth Hyman Adkins, Richmond, September 12th. Dr. Jones is a graduate of the Medical College of Virginia in 1937 and is at present stationed at Bethesda, Md.

Dr. Elmer Shackelford Robertson, Richmond, and Miss Margaret Hannah Armstrong, Hillsville, September 15th. Dr. Robertson graduated from the Medical College of Virginia in 1940.

Lt. John Rogers Mapp, M.C., U.S.A., and Miss Sarah Rebecca Moore, Pageland, S. C., August 21st. Dr. Mapp graduated in medicine from the University of Virginia in 1940 and is affiliated with the University of Virginia Evacuation Hospital, Unit No. 8.

Dr. William Minor Deyerle, Bluefield, W. Va., and Miss Frances Mozelle Hood, Richmond, September 12th. Dr. Deyerle graduated from the University of Virginia, Department of Medicine, in 1940.

Dr. Henry Price Deyerle, Harrisonburg, and Miss Mary Elizabeth Savage, Franklin, August 25th. Dr.

Deyerle received his medical degree from the University of Virginia in 1942 and is now serving an internship at the Roper Hospital, Charleston, S. C.

Miss Dorothy Lenore Suade, Gardner, Mass., and Dr. George Andrew Shetter, Richmond, September 1st. Dr. Shetter is a graduate of the Medical College of Virginia in the class of 1937.

Dr. Archibald C. Randolph, Upperville, and Mrs. Theodora Ayer Winthrop, Middleburg, September 3rd.

Southern Medical Association.

The thirty-sixth annual meeting of the Association is to be in Richmond, November 10, 11 and 12, under the presidency of Dr. M. Pinson Neal of Columbia, Mo. The local committee, headed by Dr. Wyndham B. Blanton, and Mr. Loranz, secretary of the Association, have completed plans for an excellent meeting and a large attendance is expected. There are good hotels in Richmond but, as there are always many Service men coming and going, it would be well, as far as possible, to make reservations in advance. Write Hotel Committee, Southern Medical Association, 109 North 5th Street, Richmond, giving type and price of accommodations desired.

Richmond and Virginia extend a cordial invitation for those who can to attend.

The Southern Psychiatric Association

Is to hold its annual meeting in Richmond, with headquarters at Jefferson Hotel, November 6 and 7, just prior to the meeting of the Southern Medical Association. Dr. Whitman C. McConnell of St. Petersburg, Fla., will preside. Dr. James K. Hall of Richmond is president-elect. Further information about this meeting may be obtained from the secretary, Dr. Newdigate M. Owensby of Atlanta.

News from University of Virginia, Department of Medicine.

Dr. H. B. Mulholland and Dr. Alfred Chanutin attended a four-day course of lectures and demonstrations in Chemical Warfare given in August under the auspices of the Office of Civilian Defense and the Chemical Warfare Service at Edgewood Arsenal, Maryland.

Dr. J. Edwin Wood addressed the James River Medical Society in Scottsville, on July 15th. He discussed the use of certain drugs in heart disease.

On September 2nd, Dr. W. E. Baker spoke before the University of Virginia Medical Society on the subject of Syphilis.

The following changes have occurred in the Medical Faculty of the University of Virginia, effective July 1, 1942:

Dr. H. B. Mulholland has been appointed Assistant Dean;

Dr. Samuel Alexander Vest has been promoted from Associate Professor to Professor of Urology;

Dr. Lawrence T. Royster resigned as Professor of Pediatrics;

Dr. Robert Bennett Bean retired as Professor of Anatomy.

Dr. E. C. Gates,

Chesterfield County Health Officer, has been appointed director of the county OCD emergency medical services.

Dr. D. Lane Elder

Has just been re-elected a member of the Hopewell City Council, of which body he has been a member for twenty-two years. In addition to this, he has been mayor of that city for twenty years.

Peptic Ulcer Film Available.

There is now available for free showings before groups of physicians the first complete movie film on peptic ulcer, in color and with sound track.

The film is entitled "Peptic Ulcer" and was produced under the direction of the Department of Gastroenterology of the Lahey Clinic of Boston. The American College of Surgeons has awarded its seal of approval to the film.

Running time of the film is 45 minutes, 1600 feet of 16 mm. film, and covers a presentation of the following problems of peptic ulcer: Pathogenesis, diagnosis, treatment, pathology, complications, including obstruction, hemorrhage, and perforation, gastric ulcer, surgery and jejunal ulcer.

Arrangements for a showing of the film may be made by writing to the Professional Service Department of John Wyeth and Brother, Inc., Philadelphia, who will provide projection equipment, screen, film, and operator for medical groups, without charge.

Dr. John L. Couper,

Class of '41, University of Virginia, Department of Medicine, after a year at St. Luke's Hospital, New York City, has located in Lexington.

Luncheon Meeting Changed to Breakfast.

Since publication of the program for the Roanoke meeting of the Medical Society of Virginia, the Alumni Association of the Medical College of Virginia has decided to change its luncheon to a breakfast meeting on Tuesday, October 6th, at 8:00 a.m. This has been done to avoid conflict with other luncheon meetings which some of the alumni might wish to attend.

It is suggested that those who plan to arrive on the early morning train and wish to attend the breakfast, drop a card to Dr. Frank A. Farmer, 307 Medical Arts Building, Roanoke, that a reservation may be made.

Dr. Hubert D. Crow

Has been appointed director of a combined health district unit composed of the counties of Southampton, Isle of Wight, Nansemond and the City of Suffolk, with headquarters at Suffolk. These include the districts formerly under Dr. Crow and Dr. B. R. Allen, who has entered the Service.

Dr. Royster Retires as a Professor at the University.

Dr. Lawrence T. Royster, for a number of years head of the department of pediatrics at the University of Virginia, recently resigned from this position. He was an alumnus of that school and had been head of the pediatric department there since 1923.

The American Academy of Physical Medicine

Will hold its annual scientific session at the Hotel Statler, Boston, October 14 to 17. The program will be composed of clinical and scientific presentations involving techniques of importance in Wartime Medicine.

Speakers will include pioneers in the development of physical medicine in the earlier World War, physicians actively concerned with military medicine, and leaders in the special medical fields. A clinic will be conducted at the Massachusetts General Hospital. The Academy will have the cooperation of the Massachusetts Institute of Technology and other Medical and Scientific Institutions. Captain William Seaman Bainbridge, M.C., U.S.N., is President, and Lt. Col. William D. McFee, M.C., U.S.A.R., chairman of Committee on Program. Physicians are invited to attend without registration fee. A copy of the official program can be obtained from the Secretary-Treasurer, Herman A. Osgood, M.D., 144 Commonwealth Avenue, Boston, Mass.

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons

Held its fifty-fifth annual meeting at the Homestead, Hot Springs, Va., September 10-12, under the presidency of Dr. Grandison D. Royston of St. Louis. Dr. Willard R. Cooke of Galveston, Texas, succeeded to the presidency and Dr. Lewis F. Smead of Toledo, former treasurer, was named president-elect. Dr. James R. Bloss of Huntington, W. Va., was re-elected secretary, and Dr. Ward F. Seeley of Detroit was named treasurer. It was voted to discontinue the Spring clinical meetings for the duration but to keep up the annual meetings. Place and time of the next one will be selected by the Board of Directors. Dr. M. P. Rucker, Richmond, only Virginia member, attended this meeting.

Dr. H. L. Baptist,

Formerly of Ivy Depot, has moved to Troutville, where he has taken over practice in a large territory left without a doctor, owing to the departure of Dr. S. F. Driver for military duty.

Dr. D. F. Love,

Recently of New Market, announces his return to Harman in Buchanan County.

To Speak Before Southern T. B. Conference.

Dr. Dean B. Cole of Richmond, a member of the board of directors of the Virginia Tuberculosis Association, will present a paper before the Southern Tuberculosis Conference in Memphis, October 5-7, his subject being "Pleurisy and Effusion".

Dr. Charles P. Cake of Arlington, another director of the Virginia Association, will conduct an x-ray clinic at this meeting.

Associate Physician at St. Albans Sanatorium.

Dr. James K. Morrow of Little Rock, Ark., is now associated with St. Albans Sanatorium, Radford, having succeeded Dr. Wiley D. Lewis who has entered the U. S. Army Medical Corps.

West Virginia State Medical Association.

At its meeting held during the summer at Huntington, Dr. Richard O. Rogers of Bluefield succeeded to the presidency and Dr. Robert J. Wilkinson of Huntington was named president-elect.

Dr. Marshall T. Vaden

Has been appointed chief of the emergency medical service for Buena Vista and Rockingham County according to an announcement from the State office of civilian defense.

Dr. Garland M. Harwood,

Richmond, has been appointed acting medical director of the Life Insurance Company of Virginia, taking over the duties of Dr. Ennion S. Williams who recently resigned to enter the Navy.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

A.A.A.S.—Relapsing fever in the Americas.
Anderson & Arnstein—Communicable disease control.
Atkinson, M.—Behind the mask of medicine.
Bogert, L. J. Nutrition and physical fitness.
Bourne, G.—Nutrition and the war.
Culbertson, J. T.—Immunity against animal parasites.
Duke-Elder, W. S.—Textbook of ophthalmology. volume 3.
Duncan, G. C. ed.—Diseases of metabolism.
Ebaugh & Rymer—Psychiatry in medical education.
Eliason, E. L.—First aid in emergencies.
French, T. M.—Psychogenetic factors in asthma.
Greenhill, J. P.—Obstetrics in general practice.
Harkins, H. N.—The treatment of burns.
Hoff & Fulton—A bibliography of aviation medicine.
Levine, S. A.—Clinical heart disease.
Master, A. M.—Electrocardiogram and x-ray configuration of the heart.
Roddis—A short history of nautical medicine.
Schoenheimer, R.—The dynamic state of body constituents.
Sherman & Pearson—Modern bread from the viewpoint of nutrition.
Steincrohn, P. J.—You don't have to exercise.
Walls, G. L.—The vertebrate eye and its adaptive radiation.

The 30th Annual Report of St. Elizabeth's Hospital, Richmond,

Recently published, includes a record of all patients admitted to this hospital during 1941, a list of the publications by the staff, the statistics of the School of Nursing, of the Out-Patient Department, and the Clinical laboratory. This is followed by a record of the diagnosis and the operative treatment of patients admitted to the hospital. The usual detailed critical resume of the deaths is given. The report of the dietary department, which was first given in 1940, shows the same type of work being done with a high percentage of special diet trays.

In the listings of the staff it is noted that several of its members have been called to military or naval services, and that there have been changes in the nursing staff. The number of scientific publications by the staff is somewhat larger than it has been in recent years.

For the past four or more years there has been a gradual increase in the number of patients admitted to the hospital, the 1,606 admitted in 1941 being the largest number recorded.

There were only 47 deaths in 1941, a percentage of 2.9 as compared to 52 deaths in 1940 with a percentage of 3.38. In these 47 deaths there were 40 necropsies (85 per cent) as compared with 36 necropsies (69 per cent) in 52 deaths in 1940.

Graduate Fortnight in New York City.

The annual Graduate Fortnight of the New York Academy of Medicine will be held October 12 to 23 in New York City. The subject this year is to be "Disorders of the Nervous System". There will be panel discussions in the mornings, hospital clinics in the afternoons, evening addresses, and scientific exhibits and demonstrations.

Admission to the Graduate Fortnight is by registration card only, this being limited to the medical profession. Physicians, not members of the Academy, will be sent registration cards upon receipt of check of $5.00, payable to the New York Academy of Medicine, 2 East 103rd Street, New York, N. Y.

American Board of Obstetrics and Gynecology.

The next written examination and review of case histories (Part I) for all candidates will be held in various cities of the United States and Canada on February 13, 1943. Candidates who successfully complete this proceed automatically to the Part II examination held later in the year. All applications must be in the office of the Secretary by November 16, 1942.

Effective this year there will be only one general classification of candidates, all now being required to have been out of medical school not less than eight years, and in that time to have completed an approved one year general rotating internship and at least three years of approved special formal training, or its equivalent, in the seven years following the interne year. All candidates must be full citizens of the United States or Canada before being eligible for admission to examinations.

For further information and application blanks, address Dr. Paul Titus, secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

For Sale.

Small (Little Giant) x-ray machine, diathermy machine, violet ray machine, ultra violet ray machine, and other office equipment. Write "X-Ray", care this journal, 1200 East Clay Street, Richmond. (*Adv.*).

Obituaries

Dr. Alexander Watkins Terrell,

Beloved physician of Lynchburg, died August 30th. He was eighty-one years of age and a graduate of the former Hospital College of Medicine, Louisville, in 1886. Dr. Terrell had practiced in Lynchburg for fifty-six years and was said to have been the first physician to use x-ray there. He had been physician to Randolph-Macon College since it was founded in 1892, and was a member of the Medical Society of Virginia for fifty-five years. As a token of affection and esteem Dr. Terrell was honored by a testimonial dinner in 1936, attended by over two hundred prominent business and professional men of Lynchburg, in recognition of fifty years of practice in Lynchburg and his service to the College. He is survived by several children. A brother is Dr. Thomas Terrell also of Lynchburg.

Dr. Joseph Lynn Deitrick,

Prominent physician of Ocean View, died August 29th after a brief illness. He was seventy-four years of age and a graduate in medicine from the University of Maryland in 1891. Dr. Deitrick practiced for sometime in Hanover County before going to Ocean View. He had been a member of the Medical Society of Virginia for forty-nine years. His wife and five children survive him.

Dr. Luther M. Abbott,

Well known physician of New Castle, died on August 16th after an illness of several months. He was seventy-two years of age and a graduate of the former Baltimore Medical College in 1898. Dr. Abbott had practiced for nearly half a century at New Castle, and had been a member of the Medical Society of Virginia for a number of years. His wife and three children survive him.

Dr. Joseph H. Winfrey,

For many years a prominent physician in Hanover County, died September the 7th. He was a native of Buckingham County and seventy years of age. He graduated from the former University College of Medicine in Richmond in 1899 and practiced for a couple of years in Albemarle County before locating at Glen Allen in 1902. He had been a member of the Medical Society since the year following his graduation. Dr. Winfrey was active in the church work of his community and was also a member of the Laurel Lodge of Odd Fellows. His wife and three daughters survive him.

Dr. Thomas Lea Brooks,

Well known physician of Oceana, died August 21st. He was sixty-five years of age and had been in bad health for sometime. He graduated from the former University College of Medicine in 1899, and had been a member of the Medical Society of Virginia since 1914.

Dr. Benjamin Alonza Rice,

Of Forest, for a number of years a well known physician of Bedford County, died June 16 of coronary thrombosis. Dr. Rice was sixty-three years of age and graduated from the Medical College of Virginia in 1904. He joined the Medical Society of Virginia the same year and had attended many of its sessions. He served as a captain in the medical corps during World War I and was associated with the Surgeon General's office in Washington. He was later on the staff of the U. S. Veterans' Hospital at New Haven, Conn. His wife and a son survive him.

Dr. E. H. Shackleford,

Widely known osteopath of Richmond, and for more than twenty years a member of the State Board of Medical Examiners, died September the 14th. He was a native of Missouri but moved to Richmond in 1900 and had since practiced his profession in this city. He was a former president of the Virginia Osteopathic Association and served for a term as a trustee of the American Osteopathic Association.

Commander Julian T. Miller,

Medical Corps, U.S.N., retired, died at his home in Portsmouth, September 21, at the age of seventy. He was a native of Alexandria and graduated in medicine from the University of Virginia in 1892. Dr. Miller had made his home in Portsmouth for the past thirty-five years and, during his retirement, served for nearly two years as director of Public Welfare in Portsmouth, resigning in February, 1941. His wife and a daughter survive him.

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The suggested dosage of Phosphaljel is one, or occasionally, two tablespoonfuls every two hours during the active stage of the ulcer. Later in the course of management, three tablespoonfuls with meals and at bedtime or two tablespoonfuls six times daily with or between meals is recommended. Wyeth's Aluminum Phosphate Gel is supplied in twelve fluid ounce bottles and is available at all pharmacies.

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[1]*Fauley, G. B.; Freeman, S.; Ivy, A. C.; Atkinson, A. J., and Wigodsky, H. S.: Aluminum Phosphate in the Therapy of Peptic Ulcer, Arch. Int. Med. 67: 563-578 (March) 1941.*

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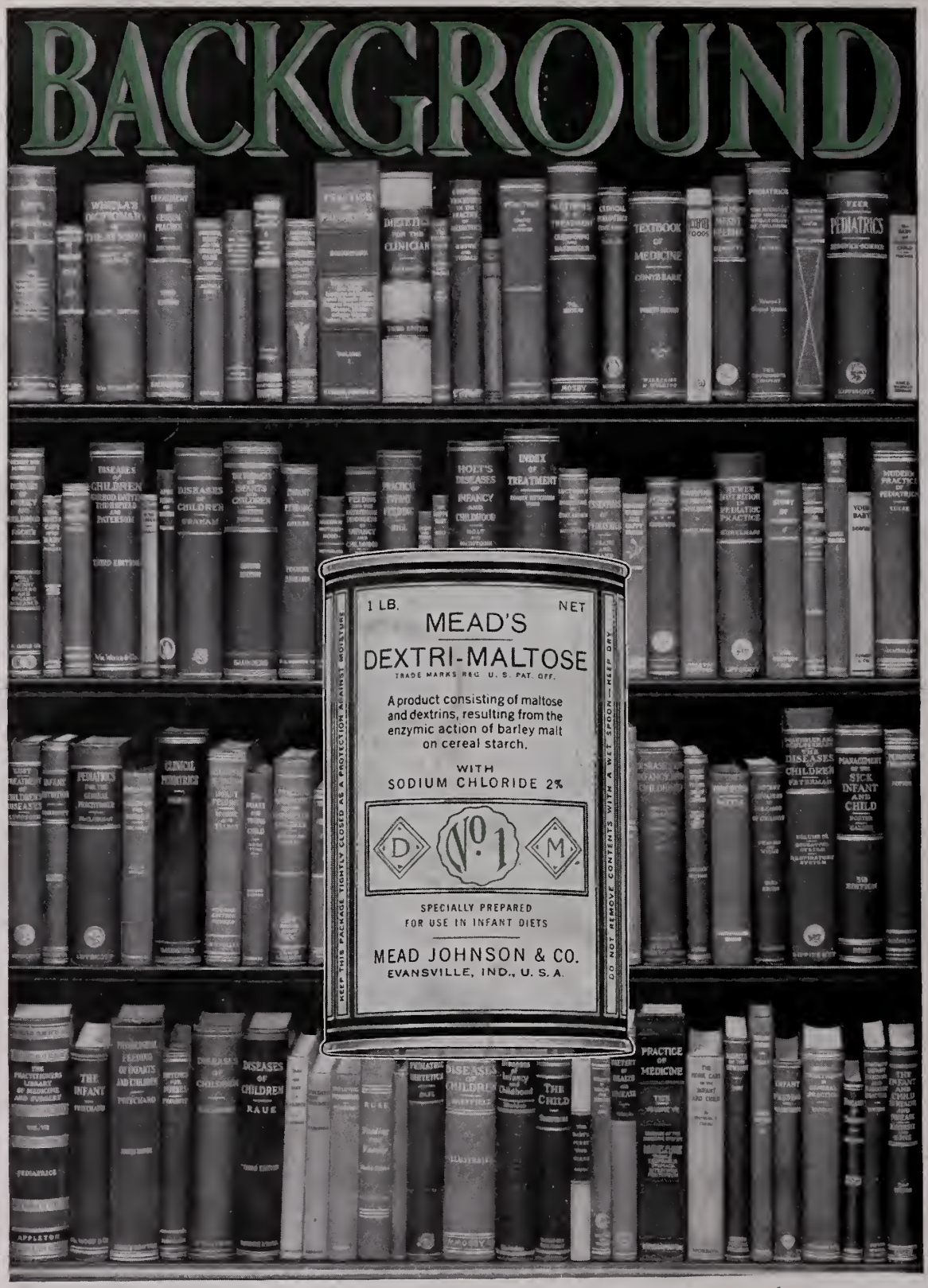
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Official Publication of the Medical Society of Virginia

VOL. 69. November, 1942 No. 11.

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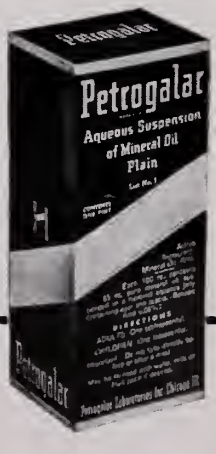

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Vol. 69, No. 11.
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RICHMOND, VA., NOVEMBER, 1942.

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VIRGINIA LAWS OF INTEREST TO DOCTORS

RALPH T. CATTERALL, B.A., LL.B.,
Associate Professor of Law, University of Richmond,
Richmond, Virginia.

This brief survey of the law of Virginia as it applies to members of the medical profession is written for the purpose of calling to the attention of doctors rules of law that they might be interested in by reason of the fact that they are doctors. No laws are discussed that would be of equal interest to members of the general public, such as how to reduce taxes or make contracts.

ADMISSION TO AND EXPULSION FROM PRACTICE

Because of the harm that an unskillful physician or surgeon can do, the state undertakes to protect its people by giving a certificate of proficiency to those practitioners whom it regards as reasonably safe to let loose on the public.

The Board of Medical Examiners was created in 1885. Originally it consisted of three members from each congressional district, two from the state at large, and five homeopaths. They were required to be "men learned in medicine and surgery."

At present, the Board consists of one "regular physician" from each congressional district, and one homeopath and one osteopath from the state at large. They are required, by Section 1608 of the Code of Virginia, to be "men learned in medicine."

By virtue of sec. 1609, all members are appointed by the Governor, but he has to appoint the regulars from a list furnished by the Medical Society of Virginia and the irregulars are "nominated to him by their respective State medical societies." The recommendations are "by the votes of a majority present at a meeting of the said societies." The Governor can refuse to appoint the recommended members, in which case the society has ninety days in which to submit new names, and this process can go on indefinitely. The Governor can remove any member of the Board for misconduct or incapacity; but since the statute gives him the sole right to define those terms, the members actually hold office at his pleasure.

Section 1610 authorizes the Board to elect its officers from among its members. All members have to take an oath to uphold the Constitutions of the state and nation. The Board is required to meet at least once a year and may hold as many meetings as they see fit and may select the place of meeting. The Board is empowered to make rules "for the examination by its members of candidates for the practice of medicine, including the scope of the said examination."

Section 1610 includes the following provision:

"The board, or any committee thereof, may employ counsel, shall have the power to compel the attendance of witnesses and administer oaths, and may take testimony and proofs concerning all matters within its jurisdiction."

The statute fails to define the manner in which the Board may "compel the attendance of witnesses." However, the statute says the Board "may employ counsel." Pre-

sumably the legislature thought that the counsel would be able to figure it out. The method, if any exists, of coercing witnesses to appear before the Board, is to be found in sections 6217-6222 of the Code of Virginia.

A quorum of the Board is five, so that the osteopath and the homeopath constitute a hopeless minority.

Section 1611 requires the Board to keep records of the name, age, address and scholastic record of all applicants for licenses, and to transmit a copy thereof, together with photographs of all successful candidates, to the Superintendent of Public Instruction. Copies of these records certified "under the hand and seal of the secretary of the Board" or of the superintendent "shall be admissible as evidence in all the courts of this State." I infer that when the General Assembly said "seal of the secretary" it meant seal of the Board, and that the Board is thus, by implication, authorized to adopt a seal.

The Code of Virginia recognizes five "schools of practice": medicine, homeopathy, osteopathy, chiropractic and chiropody. All but the last have to pass the regular examinations given by the Board.

A chiropodist, who is defined by section 1619 of the Code as a person who treats "local ailments of the human hand or foot" without using a knife to cut very deep and without using a general anaesthetic, is required to pass an examination in only the limited number of subjects germane to his specialty: anatomy and physiology of the feet, pathology, materia medica, therapeutics, chemistry, minor surgery, and bandaging. He must be over 21, of good moral character, and a graduate of a school of chiropody "or equivalent institution" giving a two years' course. He must have the "equivalent" of a high school education, and pay a fee of $20.

Section 1622 of the Code defines the practice of medicine as follows:

"Any person shall be regarded as practicing medicine within the meaning of this chapter (1) who opens an office for such purpose, or announces to the public in any way a readiness to practice medicine in any county or city of the State, or prescribe for, or give surgical assistance, diagnoses or treats, heals, cures, or relieves those suffering from injury or deformity or disease of mind or body, or advertises, or announces to the public in any manner a readiness or ability to heal, cure or relieve those who may be suffering from injury or deformity, or disease of mind or body for a compensation; (2) or who shall use in connection with his name the words or letters 'Dr.,' 'Doctor,' 'Professor,' 'M. D.' or 'Healer,' or any other title, word, letter or designation intending to imply or designate him as a practitioner of medicine in any of its branches, or of being able to heal, cure, or relieve those who may be suffering from injury or deformity or disease of mind or body. This section shall also apply to corporations."

The foregoing definition is broad enough to include not only the activities of ordinary physicians and surgeons, but also the practice of homeopathy, osteopathy, chiropractic, chiropody, dentistry, the activities of the corporations that sell "patent" medicines, Camel cigarettes and Dr. Pepper, or the soda fountain clerk who recommends ammonia for a hangover. A careful reading of the definition discloses that it probably does not cover university "Professors" or "Doctors" of Divinity.

Section 1622, with its broad sweep, must be read in connection with section 1618, which cuts down the definition drastically. The latter section says that "Nothing in this chapter shall be construed to affect" a long list of persons who might otherwise be thought to be practicing medicine. The list includes:

Army, navy and public health officers.

Members of hospital staffs, provided they work for nothing and the hospital is "legally incorporated."

Dentists.

Optometrists.

People who fit artificial eyes or limbs, provided they are "nonitinerant."

Doctors from outside the state who come here for consultation with a local doctor, provided they are itinerant.

Druggists who manufacture or sell "proprietary medicines." (But probably they violate the law if they recommend specific remedies to particular customers.)

The "furnishing of medical asistance in cases of emergency." (This legalizes the air-raid wardens.)

The "domestic administration of family remedies." (This legalizes a broad field of home witchcraft, but probably no fee would be charged in any event.)

The "practice of the religious tenets of any church in the ministration to the sick or suffering by mental or spiritual means without the use of any drug or material remedy, whether gratuitously or for compensation, provided sanitary laws are complied with." (This licenses the Christian Scientists and any others who choose to call themselves a "church".)

"Any hospital now established in this state." (The word "now" apparently means 1928.)

"Any person while engaged in conducting such hospital now established, if there be a licensed practitioner resident or practicing therein." (All they have to do is get a doctor to live there: he does not have to practice there to make it legal for the hospital to sell medical services.)

Nurses "who practice nursing only."

Masseurs "in their particular sphere of labor," whatever that may be.

The chapter does apply to people who peddle remedies on the streets or leave them in doorways. Honorary degrees in medicine are forbidden.

Then there is a proviso "that graduates of any sectarian school of medicine who profess to practice medicine according to the tenets of said schools shall fulfill all the conditions of the board and of the State Board of Education, save that they may be exempted from taking the examination of the regulars on practice of medicine, materia medica and therapeutics." The sectarian is not allowed to give drugs or practice surgery "unless he has qualified himself so to do by examination before the board." The statute contains no definition of a "sectarian school of medicine." Webster's New International Dictionary (2nd Ed.) defines a sectarian as "a narrow or bigoted denominationalist." I suppose the board could hold oral examinations to determine whether a candidate's bigotry was an adequate substitute for a course in therapeutics.

In addition to the exceptions contained in the foregoing section of the Code, there is a grandfather clause in Section 1613 which safeguards the rights of all "Legal practitioners of medicine, homeopathy, osteopathy, and chiropractic practicing under the provisions of previous laws." These old-timers, for a fee of fifty cents, are issued "verification licenses." To get in under this section, ordinary physicians and homeopaths must have been in practice before 1885, osteopaths before 1903, and chiropractors before 1913. Moreover, they are required to submit to the Board "documents sufficient to establish the existence and validity of a diploma granted to each by some bona fide college of medicine, homeopathy, osteopathy and chiropractic." During the early days of its existence the Board must have had a good deal of fun determining the difference between a bona fide college and a mala fide institution. Probably the diplomas of both looked much alike.

The same section of the Code gives the Board wide discretion to "arrange for reciprocity with the authorities of other states, territories and countries having requirements equal to those established by this chapter." The Board may also accept the "endorsements" of boards of States with which reciprocity has not been established if the "credentials" of the applicant are satisfactory. And, finally, the Board "may accept in lieu of its own examination the certificate of the national board of medical examiners." The fee for reciprocity certificates is $50.

A physician who loses his certificate can get a new one from the secretary of the Board on payment of $1.

Under Section 1615, anybody not exempt by virtue of the provisions of the law already discussed is forbidden to practice until he has passed "an examination before the board of medical examiners." Before taking the examination, the candidate must pay the Board $25 and convince it:

(a) That he has reached the age of 21 and "has not at any time been guilty of unprofessional conduct."

(b) Is of good moral character.

(c) That he has had as much pre-medical general education as is required "preliminary to receiving the degree of bachelor or doctor of medicine in this State." The candidate must prove this fact by submitting a certificate of the Superintendent of the State Board of Education.

(d) Has studied four years at a medical school "registered as maintaining a standard satisfactory to the State board of education." But the board of education has to base its standards on the grading of the American Medical Association, the American Institute of Homeopathy and the American Osteopathic Association, except that the Board may not register any out-of-state medical school "whose minimum graduation standard is less than that fixed by statute of Virginia medical schools." (I cannot find any such statute fixing minimum graduation standards.) An amendment adopted in 1942 allows the four years of medical school to be compressed into intensive work for 32 months.

The Board is given discretion to accept "evidence of graduation from a registered college course" in lieu of the first year of medical school. But the college course must satisfy the requirements not only of the Board but also of the State Board of Education.

The Board may allow candidates over 19 who have had two years in medical school to take the examinations in anatomy, histology, physiology, embryology and chemistry, provided the candidate has passed in all those subjects in school.

A candidate who has previously had five years of "legal and reputable practice" cannot be required to take examinations in the abovementioned subjects, and may be excused from taking any or all of the other examinations. Apparently, under this clause, the Board could admit "reputable" physicians who are refugees from Nazi persecution without examination.

(e) Finally, the candidate must either have a degree in medicine from "some registered medical school" or a license "conferring full right to practice medicine in some foreign country."

The section then defines the required pre-medical academic study. The candidate must have graduated either from college or from high school, but apparently need not have graduated from both. Moreover, he need not have graduated from either if the State Board of Education will certify that he has had a preliminary education "fully equivalent" or will give him a "medical student certificate". In addition to the foregoing options, he can enter medical school if he has passed "State Board of Education examinations, securing sufficient academic counts, in accordance with the standard of the association of American Medical Colleges, the Council of Medical Education of the American Institute of Homeopathy, or American Osteopathic Association, respectively, or their full equivalent."

A proviso permits an applicant who has flunked the examinations to try again within one year without paying another fee.

A second proviso requires the Board to issue a license without examination to anybody who can produce a certificate from the Judge of the Circuit Court and the Commonwealth's Attorney of the county he lives in stating that they think he was a practicing physician before January 1, 1885, an osteopath before January 1, 1903, or a chiropractor before January 1, 1913. It would be hard to imagine any rational ground for making this proviso apply only to country doctors and not to city doctors. Perhaps the General Assembly thought that country doctors were more apt than city doctors to have lost the "documents" required by section 1613. A large number of pres-

sure groups must have had a hand in drafting this statute, which bears an unmistakable resemblance to a crazy quilt.

I have heard it said that the doctors are "afraid" that efforts will be made to amend this statute at the next meeting of the General Assembly, but it is hard to see how any change could make it worse. To an innocent bystander, the statute's worst features appear to be (a) its failure to require an academic degree or at least three years of college before entering medical school, (b) its authorization of any amount of mumbo jumbo by any group that calls itself a church, (c) its license to hospitals to sell medical services, and (d) its license to druggists to sell proprietary medicines. Furthermore, there ought to be a law against all advertisements beginning "Can a married woman ever feel safe."

The General Assembly, at its 1942 session, created a commission to investigate and report "a comprehensive plan for examining and licensing all persons seeking to practice any branch of the healing art in this State, and for effective means of preventing unqualified persons from practicing any branch of the healing art in this State." The commission is to report its recommendations to the 1944 session of the General Assembly.

When the doctor has finally got his certificate, section 1612 requires him to register it with "the clerk of the circuit court of the county or the corporation court of the city" where the doctor intends to practice. The clerk is required to keep a "medical register" and devote one full page of it to the biographical history of each doctor. For all this work the clerk is paid $1. Every time the doctor moves from one city or county to another, he has to register his certificate at his new domicile "and the absence of such record shall be prima facie evidence of the want of possession of such certificate." Whenever the doctor dies, moves away, or has his certificate revoked, the clerk of the court has to record the fact "at the bottom of the page of the said licensee." How the clerk is to discover these facts is not stated. If the clerk "knowingly" fails to do his duty, he is to be fined not more than $50. The clerk's certificate that any person "has or has not registered in his office" is admissible in evidence.

Section 1614 authorizes any member of the Board to make anybody who claims to be a registered practitioner prove his identify and exhibit his certificate. In case of refusal, the member "shall report the case to the Commonwealth's Attorney" whose duty it is "to immediately prosecute such person for violating this chapter." In every such prosecution, the prisoner is presumed to have no right to practice.

Under section 1623, any person practicing without a license may be fined up to $500 and put in jail up to six months "and each day of such violation shall constitute a separate offense." Thus a busy practitioner who had no license might spend the rest of his life in jail. An unlicensed practitioner cannot sue his patients for fees for services rendered.

Section 1617 requires the Board to give written examinations "together with practical tests" which "shall be entirely fair and impartial to all individuals and every school of medicine." Luckily no penalty is provided for giving an examination that is unfair to some school of medicine. This is a field of administrative law in which it is virtually impossible for the law makers to check the law enforcers. Here, as elsewhere, the public is at the mercy of the bureaucrats. "A government of laws and not of men" is a good slogan, but impossible of practical application. For these arduous services each member of the Board except the secretary is paid $10 a day "for each day actually employed in the discharge of his official duties." The secretary may, in the discretion of the Board, be paid as much as $1,500 a year. (Sec. 1616).

Section 1614a of the Code authorizes the Board to refuse to issue a license to, or to revoke or suspend the license of, any person who:

1. Has a dishonorable character.
2. Has an immoral character.
3. Is grossly ignorant.
4. Is grossly careless.
5. Commits an unprofessional act, which is defined as follows:

a. Committing "any crime involving moral turpitude," or getting his license to practice fraudulently. There is no legal definition of "moral turpitude." It is a crime of considerable magnitude for a Richmond doctor to drive his automobile to Virginia Beach for a week-end; but does it involve moral turpitude? Leon Henderson would probably say that it did, and Adolph Hitler would probably regard it as highly commendable.

b. Being a drunkard or dope fiend.

c. Being an abortionist.

d. Prescribing or dispensing dope or "narcotics or alcoholics" for other than medicinal purposes.

e. and g. Make it professional misconduct to engage in certain forms of advertising of medical business:

If the ad contains grossly improbable or extravagant statements.

If it has a tendency to deceive people.

If it has a tendency to impose upon credulous or ignorant people.

If it even mentions venereal diseases, the genitourinary organs or chronic ailments.

If it claims that the doctor belongs to a "school of treatment" that he has no certificate to practice.

If it claims that he can treat diseases by a secret method.

(The statute thus prohibits the only kinds of advertising that anybody would wish to publish, and it might as well be amended to prohibit advertising altogether.)

f. Splitting fees between physicians and surgeons.

An applicant can appeal to the circuit court of the county or the corporation court of the city in which he resides from a decision of the Board refusing to let him take an examination or refusing to give him a certificate. The member of the Board from that Congressional District must appear as defendant in the suit. The Commonwealth's Attorney defends the suit, and the applicant has the burden of proof. From the judgment of the court there is no appeal to the Supreme Court of Appeals.

Proceedings to suspend or revoke the license of a practitioner can be instituted only by the member of the Board who resides in the same Congressional District as the practitioner. The member must file with the Board written charges against the character or conduct of the practitioner. The Board must serve on the practitioner a copy of the charges and give him ten days' notice of the time and place of the hearing. The practitioner has the right to be present at the hearing, to summon witnesses and to be represented by counsel. If he fails to attend, he can be tried in his absence. The Board has the right to employ counsel and a stenographer and to summon witnesses. Nine members of the Board constitute a quorum and it takes a three-fourths' vote to convict.

If the practitioner's certificate is revoked or suspended he can appeal to the circuit court of the county or the corporation court of the city in which he resides, but he cannot practice pending the appeal. The judge of the court, without a jury, "shall

proceed to review the issue upon the record of the said Board." Perhaps that means that the practitioner cannot introduce any new evidence before the court. The statute places the burden of proof on the practitioner and commands the Commonwealth's Attorney to represent the Board. No appeal is allowed from the judgment of the court.

A practitioner whose license has been revoked may, after three months have elapsed, apply to the Board for reinstatement, on payment of a fee of $5.

THE MEDICAL COLLEGE OF VIRGINIA

The Medical College was incorporated in 1854 and its charter, as amended from time to time, is now Chap. 508 of Acts of 1916, p. 857.

Its board of visitors consists of 19 members appointed for life by the Governor. The General Assembly, in sec. 8, reserves the right to alter the charter at any time, and no executive officer of the State government has any authority to interfere with the institution. Governor Cameron once tried to dismiss the members of the Board, and the Court of Appeals, in *Lewis* v. *Whittle,* 77 Va. 415 (1883) kept him from doing so.

The General Assembly, while reserving the right to interfere at any time, has, in the meantime, delegated to the Board complete authority to run the institution. Section 4 of the Charter provides:

"The board of visitors shall manage the affairs of the corporation, care for its property, conduct its business, control its finances and shape its policy."

The *purposes* of the corporation are purely educational. It therefore has no authority to run a hospital for the purpose of alleviating pain and disease but only for purposes of teaching. The "purpose clause" of the Charter reads as follows:

"The said corporation is formed for the purpose of establishing and maintaining a medical college and such other institutions connected therewith, to teach medicine, dentistry, pharmacy and all the arts and sciences and branches of learning relating to or connected with any of these subjects, and in connection therewith it shall have power to maintain and conduct hospitals, infirmaries and dispensaries and such other necessary kindred institutions as may, in the opinion of the board, be proper for the successful operation of said Medical College of Virginia."

The board is authorized to appoint a faculty of as many members "as may be necessary for the college, all of whom shall hold their offices during the pleasure of the board of visitors."

Since the treatment of the sick is thus made subsidiary to the teaching of students, it follows that the board is authorized to exclude from the hospital any patient whose disease has no educational value and any physician whose methods of treatment the board does not want the students to study. The board can exclude from the hospital all physicians who are not members of the faculty, and can treat appointment to the staff as constituting appointment to the faculty.

The General Assembly has entrusted to the board, during the pleasure of the General Assembly, all the powers that it has to give, and nobody has any greater right to sleep in the buildings owned by the corporation than he would have to sleep in the Hall of the House of Delegates.

No constitutional questions are involved. In *Hayman* v. *Galveston,* 273 U. S. 414, 71 L. ed. 714 (1927) the court said:

"The protection of the due process clause extends to persons who are noncitizens. But the only protection claimed here is that of appellant's privilege to practice his calling. However extensive that protection may be in other situations, it cannot, we think, be said that all licensed physicians have a constitutional right to practice their profession in a hospital maintained by a state or a political subdivision, the use of which is reserved for purposes of medical in-

struction. It is not incumbent on the state to maintain a hospital for the private practice of medicine.

* * * *

"In the management of a hospital, quite apart from its use for educational purposes, some choice in methods of treatment would seem inevitable, and a selection based upon a classification having some basis in the exercise of the judgment of the state board whose action is challenged is not a denial of the equal protection of the laws."

In that case the board excluded from the hospital all osteopaths and all patients who wanted to be treated by osteopaths.

The State constitution forbade the legislature to discriminate in any way against osteopaths:—"no preference shall ever be given by law to any schools of medicine." The court brushed aside that provision by saying:

"The limitation of the provision is obviously directed to the qualifications of those to be admitted to the practice of their profession in the state and has nothing to do with the qualifications of those who are to be allowed to practice in a state hospital or to participate in an educational enterprise conducted by the state."

CRIMES THAT ONLY DOCTORS CAN COMMIT

Section 1639 makes it a misdemeanor for two doctors to split fees in cases where one of them recommended the other to the patient. The statute does not make it a crime to split fees with laymen who send patients.

Section 4401 makes it a felony punishable by imprisonment for not less than three nor more than ten years to perform an abortion except for the purpose of saving the mother's life. Anybody who states publicly that he thinks the practice of abortion is a good thing is guilty of a misdemeanor.

Virginia has no law against contraceptives.

CORONERS

The office of coroner is of great antiquity, but is always lapsing into disrepute. We find Blackstone lamenting the good old days when only gentlemen could be coroners, and he records an instance in the days of Edward III when a man was removed from the office "because he was only a merchant." The office, he says, "has been suffered to fall into disrepute, and get into low and indigent hands."

The coroner presided over a jury of four, five or six to inquire into cases of sudden death, cases of shipwrecks and concerning treasure-trove.

Virginia coroners are now required by section 2815 of the Code to be physicians, are appointed by the judge of the circuit or corporation court for terms of four years, and are not required to investigate shipwrecks and buried treasure. However, they have to perform the duties of the sheriff when that officer and his deputies are unavailable.

The coroner's jury was abolished in Virginia in 1926.

Section 4806 of the Code requires the physician, undertaker, "or other person in attendance" to notify the coroner of any death that is "sudden, violent, unnatural or suspicious" or of any death "without medical attendance." The coroner must then "view the body and make inquiry into the circumstances of the said death." If the death resulted "apparently from an injury which occurred or illness which commenced" in some city or county other than that in which the corpse is lying, the coroner of that other city or county must be summoned to view it. This provision, which was added by Acts of 1942, p. 245, can cause a good deal of inconvenience. It is not however necessary to leave the corpse in the middle of the street until the coroner gets there. The widespread superstition that it is against the law to move the body is based on the reading of detective stories and not on anything in the laws of Virginia.

If the coroner suspects foul play he can hold an inquest, but only if the Commonwealth's Attorney or the local judge asks him to.

The most useful purpose served by a coroner's inquest is to compel witnesses to answer questions under oath. All witnesses are bound to answer except those guilty of the crime. The murderer is privileged to say: "I respectfully refuse to answer on the ground that my answer might tend to incriminate me." This seldom happens. A grand jury can be used for much the same purpose, but not so effectively. The police, be it observed, have no right to make witnesses answer questions. They sometimes resort to the "third degree", but it is entirely illegal. The coroner's inquest provides a legal third degree.

The more progressive states have abolished the office of coroner and substituted that of medical examiner. The 1942 General Assembly of Virginia directed the Advisory Legislative Council to give some thought to this matter, in a joint resolution beginning:

"Whereas there is an increasing dissatisfaction with the laws of Virginia under which medical examinations in cases of death under questionable or suspicious circumstances are made under the direction of coroners who have had little if any training and experience in pathology and toxicology, and who have no adequate laboratory equipment to ascertain the causes of such deaths. . . ."

At present, section 4815 of the Code authorizes ignorant coroners to compel physicians to attend "and give information and render services incident to his profession useful to said coroner; and reasonable compensation therefor shall be allowed, as part of the costs of the inquest."

Section 4807 authorizes the coroner to summon witnesses.

Section 4810 authorizes him to compel them to answer questions under oath. Their testimony is reduced to writing and signed.

Section 4812 provides that the inquisition shall be filed, together with the testimony, with the court who appointed the coroner.

If the coroner thinks that murder was done, he can, under section 4813, issue a warrant for the arrest of the accused person.

Section 4814 provides that if the dead person be "a stranger" the coroner "shall cause the body to be decently buried." The coroner's next duty is to look for property belonging to the deceased and apply it to the burial expenses. If he cannot find any, the State will pay the expenses. If the person was "not a stranger" the same procedure is followed, except that the expenses are paid by the city or county. "A stranger," in this context, means a nonresident of the city or county.

If the coroner does not do his duty properly "he shall forfeit one hundred dollars." (Sec. 4816). If he does his duty properly he gets paid $3 for "viewing" the body and $5 if he "actually makes an examination of the dead body"; and, if he makes an "autopsy", the court allows him "such additional fee as shall seem reasonable." (Sec. 4818).

Doctors as Witnesses

It is only when a doctor is summoned as an advisory witness by the coroner that the law allows him "reasonable compensation therefor." In all other cases, when he receives a summons to attend, he is bound to come and tell what he knows, and the law allows him the same fee as any other witness, namely, fifty cents. As a matter of fact he usually does not get even the fifty cents, because, like other witnesses, he does not know that he must apply to the clerk of the court for a certificate for the fee immediately after testifying.

Even if the doctor is subpoenad to give testimony as an expert he is not legally entitled to a greater fee. Usually, however, the party will not want to summon an

expert witness without knowing in advance what his opinions are. The doctor, of course, can refuse to tell the party what his views are unless the party pays or agrees to pay a substantial fee. Such a contract is perfectly legal so long as the payment of the fee or its amount is not contingent on the outcome of the lawsuit. If the fee is contingent it is illegal and the doctor can not collect any fee.

The expert witness differs from an ordinary witness in that the expert is called upon to express his opinion based on the facts of the case. Ordinarily, the function of the jury is to decide what the facts prove, but the jury is composed of ordinary men and there are many classes of facts that are meaningless to the ordinary man. In such a situation, the expert tells the jury what inferences he would draw from those facts. If the doctor has observed the facts himself he can state directly to the jury the inferences that he draws from them. If, however, he has not personally observed the facts of the case, then those facts are proven to the jury through the testimony of witnesses who have observed them. The lawyer then puts to the doctor a hypothetical question summing up the facts and asks the doctor to state his opinion on the assumption that those facts are true.

The summary of facts contained in the hypothetical question can, of course, contain only facts that witnesses have observed and testified to. And the jury can attach no significance to the doctor's opinion unless they first find the facts to be as stated in the hypothesis. As a necessary result, hypothetical questions tend to become long and complicated. Whenever it is possible to do so in advance of trial, the lawyer should prepare his hypothetical question in writing and submit it to the witness.

Because of this peculiar situation, the cross-examination of a physician frequently degenerates into an argument between the lawyer and the witness. On the cross-examination the lawyer has the right to read to the witness extracts from medical text-books and ask the witness (a) whether the author of the book is a recognized authority, and (b) whether the witness agrees with the author. The cross-examiner hopes that the witness will answer the first question "yes" and the second, "no", and that the jury will think the book is weightier than the witness. The use of text-books on direct examination is not allowed, because of the ancient rule against hearsay.

The rule against hearsay excludes testimonial declarations in situations where there can be no cross-examination of the declarant. There are, however, many exceptions to the rule and one of them applies specifically to physicians. The physician who has examined a patient may repeat what the patient said about present and past symptoms necessary to enable the physician to make a diagnosis. The physician can testify: "The patient said his back had been hurting him for two weeks." The physician cannot testify: "The patient said the defendant kicked him in the back." These distinctions, which are second nature to lawyers, are very perplexing to physicians. Whenever the doctor uses the phrase "the history of the case," the opposing lawyer will jump up to object, the judge will look aggrieved, and the doctor will think he is in a madhouse.

Murder cases and will cases involve the most painful disputes in the field of expert testimony. "The unwritten law" is a figment of a newspaperman's imagination and it is no defense to a charge of murder that the prisoner's wife seduced the victim. If, however, the prisoner can get a doctor to testify that he became insane as a result of the seduction, he can get the story of his wife's infidelity before the jury by claiming that it made him insane. The only legal defense is the insanity, but once the jury retire to consider their verdict, they cease to be subject to any control except that of their consciences. Thus many murderers have been turned loose on the community.

When it comes to will contests, there is hardly a case in which psychiatrists of high repute do not differ as to whether the testator was sane or insane. Part of the difficulty is attributable to the circumstance that doctors regard the word "insanity" as a legal term having no precise significance in medicine, while lawyers regard "insanity" as a medical term having no precise meaning in the law.

An illustrative case is *Bruce* v. *Elliott*, 168 Va. 490 (1937) in which the unfortunate testatrix died in the insane asylum. She had the unusual habit of wearing two hats at the same time. She frequently got lost on the streets of her home town, and she could not remember that her parents were dead. At times she failed to recognize her brother; she often conversed with herself in public places; and she sometimes walked upstairs backwards. At the age of 70 she became engaged to an Italian tailor, aged 30. She purchased her trousseau, and left the house to catch a bus to go to her wedding. Her son saw her in the street and brought her home. Shortly thereafter she forgot the tailor's name.

The Supreme Court of Appeals of Virginia described the conflicting opinions of the experts as follows: (pp. 494, 495):

"Dr. Richard Joyner, a physician who had been practicing in Suffolk for fourteen years, was a member of the commission which adjudicated Mrs. Bruce to be insane. His testimony is that she was suffering from *senile dementia*, and that this is a chronic progressive disease usually of ten or twelve years standing.

"Dr. Frank Redwood, a specialist on mental diseases, likewise testified that *senile dementia* is a chronic progressive disease, and that if Mrs. Bruce was suffering therefrom on November 3, 1933, she was probably afflicted therewith from eight to ten years prior thereto.

"The purport of the testimony on behalf of the proponents of the will is that while Mrs. Bruce was perhaps eccentric in her manner, dressed queerly, and acted peculiarly at times, yet she was entirely mentally capable of making a will; that she was an intelligent and even astute business woman, and had successfully managed the large estate which her husband left her.

"Dr. Beverly R. Tucker, an expert on mental diseases, testified in reply to a hypothetical question that Mrs. Bruce was, in his opinion, mentally competent at the time of the execution of the supposed will."

In the foregoing quotation, the court calls the first doctor "a physician," the second "a specialist", and the third, "an expert". Technically, all three are what are known to the law as "expert witnesses". In this context, an "expert" is not necessarily a man of outstanding qualifications. An expert witness is simply one whose training and experience make him competent to draw from a particular group of observed facts inferences that the ordinary men assembled as the jury would not normally be competent to draw.

In actions against physicians and surgeons for malpractice, the jury, of course, cannot tell from their own experience whether the defendant failed to exercise reasonable care or not. The law is that he is liable for damages only if he did not exercise the skill and care usual in the community where he practices. Consequently the plaintiff can never win such a lawsuit unless he can find a doctor who will swear that the defendant did not exercise such skill. A lay witness would be incompetent to testify either as to how much skill was customary or whether the defendant acted skillfully. There is a widespread belief among lawyers that the esprit de corps of doctors tends to prevent a doctor from appearing as a witness for the plaintiff in such cases no matter what the facts may be, if the defendant is a reputable physician. His fellow practitioners know he did the best he could do, they shudder to think of the mistakes that they themselves might make, and they realize that although the legal standard of reasonable care is no higher than it should be, there is no way of keeping the jury

from disregarding that standard once the case is submitted to them and they retire to the privacy of the jury room.

Doctors never see the inside of a jury room because, along with lawyers, dentists, pilots, telephone operators, postmasters, stage drivers, mariners, professors, ministers, and most other people who would make good jurors, they are, by virtue of Section 5985 of the Code of Virginia, exempt from jury service.

In about half the states of the Union, a doctor on the witness stand is forbidden by statute to divulge confidential communications from his patient including what the doctor has learned from his examination of the patient. The principal effect of such statutes is to make it easier to defraud insurance companies. By suppressing the truth they produce many miscarriages of justice and they have a very slight tendency to promote any of the humanitarian purposes which they are supposed to serve. There ought not to be a special statute to protect the man who buys a life insurance policy because his doctor tells him he has cancer. And certainly a person who sues in open court for injuries to his person should not be allowed to suppress the truth about his physical condition either before or after the accident. Fortunately, Virginia has no statute recognizing any privilege for communications between physician and patient: the doctor on the witness stand has to tell what he knows like any other witness.

BIRTHS, DEATHS AND MARRIAGES

The laws impose on doctors specific duties in connection with three cardinal events in the lives of their patients.

Section 1554o of the Code requires them to report to the nearest local health officer all cases of ophthalmia neonatorum and section 1554p requires them to instill "in the eyes of the newborn babe one or two drops of a solution prescribed or furnished by the Virginia State board of health."

Section 1554r requires the board of health to enforce this law, to furnish the drops gratuitously, to publicize the dangers involved, to hand a copy of this law to all obstetricians and midwives, and to make full reports.

If the drops are not instilled, everybody present at the childbirth (including the mother who is always present and nearly always ignorant of the law) is guilty of a misdemeanor and subject, by virtue of section 1554t, to a fine of ten to fifty dollars.

When a child is born, section 1573 requires the attending physician to file a birth certificate with the local registrar of vital statistics. Blank forms for the purpose are provided by the State Board of Health (section 1561). The State Board appoints the State Registrar and that officer appoints the local registrar for towns and magisterial districts. In cities, the head of the local board of health is ex officio the local registrar of vital statistics (sections 1562, 1564).

The certificate must be filed within ten days after the birth, except that in cities the local authorities may require prompter filing. The certificate must contain the child's name and address. (If the infant has no name, the local registrar must send a special blank to the parents to fill out as soon as they make up their minds.) It must state the child's sex, whether a twin, etc., whether the parents are married, and, if so, the father's name, address, color, birthplace, age and occupation; the mother's name, address, color, birthplace, age and occupation; number of children, period of gestation. The certificate "shall be written legibly" in black ink. (Section 1574).

If the child is stillborn, both a birth certificate and a death certificate must be filed. (Section 1566).

Section 1567 requires death certificates to be on forms like those approved by the United States Census Bureau. They must include the name and address of the de-

ceased, his sex, color, marital status, date of birth, age, occupation, birthplace, names and birthplaces of parents, name and address of informant, signature of registrar, date of registration, date of death, description of medical attendance, time and causes of death, with duration of each cause, whether caused by dangerous or unsanitary conditions of employment, signature and address of physician, length of residence at place of death, place and date of burial, signature and address of undertaker.

The physician's statement must specify the time in attendance, the time he last saw the patient, the exact hour of death, the cause of death, "so as to show the course of the disease or sequence of causes." "Indefinite and unsatisfactory terms, indicating only symptoms of disease or conditions resulting from disease" will not do. In cases of violent death the physician shall state the means of injury and whether the death was probably the result of homicide, suicide, or accident.

Section 1568 deals with cases of death without medical attendance. The undertaker must notify the local registrar, who must notify the "nearest member of the county board of health" who must investigate and make the certificate. If, however, the board of health member fails to act within 24 hours, the registrar can make the certificate. If the death looks suspicious, the registrar shall call in the coroner. But in cities, the coroner makes the certificate in all cases where there was no attending physician.

Section 1580 of the Code provides that copies of birth or death certificates furnished and certified by the State Registrar (fee 50 cents) "shall be prima facie evidence in all courts and places of the facts therein stated." The statute, as we have seen, requires the physician, in the case of a violent death, to give his best guess as to whether it was homicide, suicide or accident. Property rights often turn on which it was, and it would be bad if such property rights depended on the doctor's guess. To escape that consequence, the courts have decided that the doctor's statement of the cause of death is a statement of opinion and not of fact, and that the death certificate is no evidence that his opinion is correct.

Section 1569 makes it the duty of the undertaker to see that the death certificate is obtained and filed. He is supposed to get the biographical data "from the person best qualified to supply them" and then hand the certificate to the doctor to fill in his part. The doctor then retires from the case and the undertaker delivers the certificate to the local registrar in return for a permit to dispose of the corpse.

Since 1940, it has been against the law in Virginia to get married without first going to a physician to find out if the parties have syphilis. Section 5073a of the Code describes a physician, for this purpose, as anybody who holds a license to practice medicine anywhere in the world. The physician must certify that he has given both the contracting parties "a standard serological test." If the test turns out to be positive, it shall be repeated, a physical examination shall be made, and "the medical history" of the person obtained. Moreover, "the said physician shall in person inform both such person and the other party . . . of the result of such test or tests, the nature of the disease and the possibility of transmitting the disease to the marital partner of such person and to their children." He shall then notify the State Department of Health of his findings and state that he has notified the parties. Thereafter, he signs a statement for the clerk of the court stating "without disclosing any medical findings" that the "test or tests" have been made and that the report has been sent to the State Department of Health. While the intent of the statute is to keep these proceedings confidential, if the doctor certifies to the clerk that he has made the "tests", it will be obvious that the first test was positive.

If the physician tells the parties that one or both have syphilis, the law allows them to marry anyhow; but if they do, they both have to take a course of treatment and precautions prescribed by the State Health Commissioner. Their doctor has to report the progress of the treatment to the Commissioner. If either party refuses to follow the doctor's instructions, such party is guilty of a misdemeanor; "and upon conviction shall be punished accordingly; in addition to such punishment the court or judge . . . shall require that such person take, so long as indication of syphilis remains as to either spouse, such treatment for the cure of such infection, and such precautions to prevent the spread of such infection as shall be prescribed by the State Health Commissioner." It is hard to see how the judge can compel a person to take such treatment if the person does not mind staying in jail, unless the treatment can be administered by force in jail.

Serological tests are made free of charge by the State Department of Health. The examination will be made "for any person unable to afford the services of a private physician, by any venereal disease clinic physician or any county, city or town health officer, who is also a registered physician," without charge.

The tests have to be made not more than 30 days before the marriage license is issued.

If a physician knowingly makes a false statement he shall be fined from fifty to three hundred dollars or confined in jail from ten to ninety days, or both.

VENEREAL DISEASE

Section 1554b enumerates the venereal diseases and declares that they are "contagious, infectious, communicable, and dangerous to the public health." Most people would agree.

Whenever a physician encounters a case of venereal disease, he is required by section 1554c of the Code to report it to the State Board of Health, giving the victim's name, address, "or the office number," age, sex, color, occupation, the date of the onset of the disease "and probable source of the infection."

Unless the party is an inmate of a penal institution, the physician may, if he likes the party, refrain from reporting his name and address. The doctor need not report the name and address, unless, as the statute chastely describes it, he "has good reason to suspect" that the party "is conducting himself, or herself, in such a manner as to expose any other person to infection." If the doctor's suspicions are aroused, he must give the local health officer "the essential facts in the case," and must report them in writing to the State Board of Health "in a sealed envelope."

Section 1554d requires the doctor to instruct the patient "in measures for preventing the spread of such diseases, and to inform him of the necessity for treatment until cured and to hand him a copy of the circular of information and a copy of this act, both of which are obtainable for this purpose from the State Board of Health."

Section 1554e requires all health officers to keep up a constant search for venereal diseases "and to ascertain the source of such infections." And they are directed to examine all persons who are "reasonably suspected." The statute tells them that they must reasonably suspect all vagrants, prostitutes, frequenters of houses of ill fame, persons not of good fame and persons guilty of sexual offenses.

Section 1554f authorizes local health officers to quarantine persons suffering from venereal disease, and either keep them in quarantine until they are cured or let them out on parole. He can, however, quarantine a person only "upon receipt of a report" that the party is "conducting himself or herself in such a manner as to be a menace to the public health."

Druggists are required by section 1554g to ascertain the names and addresses of all people who buy remedies for venereal diseases except on a doctor's prescription. The druggist is required to keep a record of his suspected clientele and send a copy of it once a week to the State Board of Health.

Section 1554h makes it a misdemeanor for an infected person "to knowingly expose another person to infection."

Section 1554i forbids doctors to issue "certificates of freedom from venereal diseases, except in giving such ordinary certificates of freedom from infectious diseases as may be necessary in reports of general examinations, and in certifying for the issuance of marriage license." Of course the purpose of this section is to keep uninfected prostitutes from having an advantage over their infected competitors, but its effect would seem to be to forbid doctors to certify that the waiters in a restaurant were free from venereal disease.

Any person violating the terms of the act can be fined $100 and sent to jail for 60 days. (Section 1554-L).

Section 1554m imposes a fine of ten to one hundred dollars for publishing advertisements about venereal diseases, etc., "and calling attention to any medicine or preparation that may be used therefor." Except that boards of health and agencies approved by the State Board of Health may publish such matter. It would be well if this law were expanded to cover all diseases and not merely venereal diseases.

BOARDS OF HEALTH AND QUARANTINE

The State Board of Health consists of seven members appointed by the Governor for seven-year terms so arranged that one member retires every year. Five members are chosen from different geographical sections and two from the state at large. At least two members must belong to the Medical Society of Virginia and one to the State dental association. The Board meets in Richmond at least once a year and may meet elsewhere. It elects its own president. Three members constitute a quorum. (Section 1486).

Section 1487 gives the Board wide powers to adopt and enforce regulations to protect the public against disease and makes it a misdemeanor to violate any lawful rule of the Board. The Board can make and enforce "reasonable" rules for sanitary conditions in all public conveyances, jails, hotels, schools and other places used by the public.

The Board can segregate or isolate persons having "or suspected of having" communicable diseases. It has power over the disposition of garbage and sewage. It may "make separate orders and rules to meet any emergency."

In short, the Board exercises a benevolent despotism within its sphere. It cannot, however, make a Christian Scientist take medicine even in quarantine. It cannot limit "any diseased person in his right to choose or select whatever method or mode of treatment he may believe to be the most efficacious in the cure of his ailment."

Section 1488 requires the Board to publish a list of communicable or "dangerous" diseases and make rules for reporting them to local boards of health.

The Governor appoints the Health Commissioner, who must be a physician "skilled and experienced in the administration of public health duties and versed in sanitary science." The Commissioner is the executive officer of the Board of Health but not a member of it. His term is four years, subject to removal by the Governor, and he has to live in Richmond. He is required to give lectures on hygiene and sanitation.

Section 1492 requires the State Board to appoint annually three members, one of whom must be a physician, to each local board of health. The county clerk and the

chairman of the Board of Supervisors are ex officio members of the rural boards, and in cities and towns the mayor is a member of the board, unless the city or town charter provides otherwise.

The local boards, by virtue of section 1493, have charge of local "sanitary affairs," the control of infectious diseases, and the quarantine of "suspects." They can "if in their opinion it be necessary to prevent an epidemic" provide for compulsory vaccination, "the prevention, restriction and care of smallpox and other contagious or infectious diseases." This section contains no proviso in favor of fanatics.

The local boards may promulgate rules and regulations and violations are punishable by fines of from ten to one hundred dollars.

Section 1497 allows the State Board to step in if the local board is not acting with sufficient vigor.

Section 1499 requires the State Board "on the request of any physician" to "have examinations made of pathological specimens of any suspected infectious or contagious disease that may be prevailing."

Section 1503 makes it a crime for any person "who knows himself to be infected with any dangerous, contagious or infectious disease" to go to church or to school or into any mine, factory, store, train, hotel, courthouse, jail, etc., etc. The statute omits to forbid him to go to the movies, but does forbid him "to go into the company of any one who is liable to take the infection without warning such person of his being so infected." Apparently the legislature does not care what happens to people in theatres, but to be on the safe side the patient should be advised to whisper to the spectators near him that he has a bad cold (or smallpox, as the case may be) and that they had better move over.

Section 1504 makes it a crime for any person who has been "voluntarily" exposed to a contagious disease "to go from place to place" for 15 days after the exposure unless he has "a certificate from a competent and reputable practicing physician stating that no danger of communication of disease by such exposed person exists." Of course all physicians who are legally practicing are competent and reputable in the eyes of the law. Physicians and undertakers are, however, allowed to go about freely even after voluntary exposure.

Section 1505 makes it a crime to cross quarantine lines or refuse to be vaccinated, or to aid or encourage another to do so. The punishment runs as high as six months in jail.

Section 1515 requires every physician who shall "know or suspect" that any patient has a communicable "and dangerous" disease to report it to the State Health Commissioner on blanks furnished by the State Board of Health. Failure to do so is punishable by a fine of from one to five dollars. But if the report is made to the local health department, the latter makes the report to the State Board and the physician need not do so.

Under section 1516, anybody who has tuberculosis and spits in public "or who shall deliberately and continuously place the health of any other person in danger of infection" may be detained for a year "in some suitable place" or may be required to give a bond that he will cease his objectionable practices.

Section 1550 forbids all persons to spit on the sidewalk or on the floors of any public building or conveyance. The fine is from one to five dollars. It seems to be legal to spit in the street, so we must assume that the legislature has found that microbes in the gutter are less active than those on the curb.

NARCOTICS

Section 4675(34) provides: "A physician may administer alcoholic beverages to a bona fide patient in cases of actual need when in the judgment of the physician the use of alcoholic beverages is necessary." The General Assembly, in thus drawing a line between patients and "bona fide" patients, seems to harbor unjust suspicions concerning the medical profession. It is to be observed that it is not enough that the doctor thinks the patient needs a drink: there must be "actual need."

Section 1694 of the Code forbids physicians to prescribe cocaine, opium, heroin, morphine, codeine, etc., "for the use of any habitual user of the same," except for purposes of treatment, in which case the doctor must act "in good faith" and not "for the purpose of evading the provisions" of the law.

Section 1654(5) allows physicians to buy narcotic drugs, but only on official written orders. Section 1654(7) allows a physician to prescribe, administer or dispense such drugs "in good faith and in the course of his professional practice only." The doctor must date and sign the prescription, which must give the name and address of the patient, and the doctor's name, address and registry number under the Federal narcotic laws.

The Federal narcotic laws are the slickest fraud ever perpetrated on the Constitution of the United States. Congress has no authority to regulate the practice of medicine in the states and no more power to prohibit the sale of opium than it has (now that the 18th Amendment is gone) to prohibit the sale of whiskey. But Congress does have power to levy taxes. So it imposes on physicians an annual tax of $1 if they dispense opium or coca leaves or any derivative thereof. (26 U. S. Code Sec. 3220). Section 3221 requires them to register with the local collector of internal revenue. Section 2553 allows the physician to administer the drugs "to the patient for legitimate medical purposes" provided he keeps a record of where the drugs go. The penalties for violating the law run as high (for a third offense) as a fine of $10,000 and twenty years in prison, which seems like a heavy punishment for failing to pay a $1 tax.

After the doctor has paid his annual license tax, the theory on which he is required to keep records by means of which the drugs can be traced is to make sure that the revenue does not suffer from unlicensed resales. A doctor could probably run a flourishing opium den without violating the Federal statute so long as he paid the tax and kept accurate records showing that all the stuff was consumed on the premises so that none of it could be resold by the customers. However, if he did that the Federal officers would no doubt tip off the State officers; and I do not recommend that any doctor make a test case under the Federal law. The Supreme Court has never held that such an opium den would be all right, but in *Linder* v. *United States,* 268 U. S. 5 (1925), the court said:

"Obviously, direct control of medical practice in the states is beyond the power of the Federal government. Incidental regulation of such practice by Congress through a taxing act cannot extend to matters plainly inappropriate and unnecessary to reasonable enforcement of a revenue measure."

. . . .

"The Narcotic Law is essentially a revenue measure, and its provisions must be reasonably applied with the primary view of enforcing the special tax. We find no facts alleged in the indictment sufficient to show that petitioner had done anything falling within definite inhibitions of sufficient materiality to imperial orderly collection of revenue from sales. Federal power is delegated, and its prescribed limits must not be transcended even though the end seems desirable. The unfortunate condition of the recipient certainly created no reasonable probability that she would sell or otherwise dispose of the few tablets intrusted to her; and we cannot

say that by so dispensing them the doctor necessarily transcended the limits of that professional conduct with which Congress never intended to interfere."

The State statute, section 1654(9), requires the physician to

". . . keep a record of such drugs received by him, and a record of all such drugs administered, dispensed, or professionally used by him otherwise than by prescription. It shall, however, be deemed a sufficient compliance with this subsection if any such person using small quantities of solutions or other preparations of such drugs for local application, shall keep a record of the quantity, character, and potency of such solutions or other preparations purchased or made up by him, and of the dates when purchased or made up, without keeping a record of the amount of such solution or other preparation applied by him to individual patients; provided, that no record need be kept of narcotic drugs administered, dispensed, or professionally used in the treatment of any one patient, when the amount administered, dispensed, or professionally used for that purpose does not exceed in any forty-eight consecutive hours, (a) four grains of opium, or (b) one-half of a grain of morphine or of any of its salts, or (c) two grains of codeine or any of its salts, or (d) one-fourth of a grain of heroin or of any of its salts, or (e) a quantity of any other narcotic drug or any combination of narcotic drugs that does not exceed in pharmacologic potency any one of the drugs named above in the quantity stated."

. . . .

"The form of records shall be prescribed by the State Board of Pharmacy. The record of narcotic drugs received shall in every case show the date of receipt, the name and address of the person from whom received, and the kind and quantity of drugs received; the kind and quantity of narcotic drugs produced or removed from process of manufacture, and the date of such production or removal from process of manufacture; and the record shall in every case show the proportion of morphine, cocaine, or ecgonine contained in or producible from crude opium or coca leaves received or produced. The record of all narcotic drugs sold, administered, dispensed, or otherwise disposed of, shall show the date of selling, administering, or dispensing, the name and address of the person to whom or for whose use, or the owner and species of animal for which the drugs were sold, administered or dispensed, and the kind and quantity of drugs. Every such record shall be kept for a period of two years from the date of the transaction recorded. The keeping of a record required by or under the Federal narcotic laws, containing substantially the same information as is specified above, shall constitute compliance with this section, except that every such record shall contain a detailed list of narcotic drugs lost, destroyed, or stolen, if any, the kind and quantity of such drugs, and the date of the discovery of such loss, destruction, or theft."

The penalties for violating the State narcotic law are, for a first offense, a fine not exceeding $100 or imprisonment not exceeding one year, or both, and, for a second offense, a fine not exceeding $1,000 or imprisonment not exceeding five years, or both. Sec. 1654(20).

Section 1681 of the Code of Virginia allows a physician who does not own or work in a drug store to compound his own prescriptions and to supply "to his patients such medicines as he may deem proper, if such supply is not made as a sale." It is hard to see how the doctor can sell medicines without making a sale. Presumably, however, it will be all right if he includes the price of the medicines in the fee charged for professional services.

In rural districts and small towns (pop. under 1,000) any physician can demand from the Board of Pharmacy an annual permit to compound and sell medicines and poisons.

The same section authorizes anybody to sell patent medicines and "the ordinary non-poisonous domestic remedies in original packages put up by manufacturers and wholesale dealers." The only limitation on the peddling of patent medicines is contained in section 1682a which forbids their sale "by means of any public exhibition, entertainment, performance, or carnival, commonly known as 'medicine shows' and 'patent medicine shows.'" It was 1936 before even that puny wedge was driven into

the proprietary medicine racket. In 1938 the legislature passed an even more courageous statute (Code section 1664b) which declares that an advertisement shall be deemed to be false if it represents a drug "to have any therapeutic effect in the treatment of Bright's disease, kidney diseases, cancer, tuberculosis, poliomyelitis, venereal disease, heart and vascular diseases." But even such ads are not to be regarded as false if they are "disseminated only to members of the medical and pharmaceutical professions" or appear in scientific journals or are put out "only for the purpose of public-health education by persons not commercially interested, directly or indirectly in the sale of such drugs."

Section 1681 expressly preserves the time-hallowed right of soda-fountain clerks to prescribe for hangovers: "Nothing in this chapter shall prevent the sale and dispensing at soda fountains and by other dealers of granular effervescent and proprietary liquid preparations and beverages claiming curative properties."

LUNATICS

If any judge or justice of the peace suspects that any person is insane, epileptic or inebriate, he may issue a warrant to arrest the suspect and shall summon "two licensed and reputable" physicians to advise him whether the suspect is "a suitable subject" for a lunatic asylum. One of the physicians should be the suspect's own doctor and neither of them can be related to the suspect or have any interest in his estate. If the two doctors disagree, a third is summoned as a tie-breaker. (Section 1017).

The judge or justice and the two doctors constitute together "a commission" with power to commit to the State hospitals or colonies suspects found by them to deserve such treatment.

Under section 1020, if the suspect is committed, he is turned over to the sheriff to be kept in jail until he can be transferred to a hospital or colony. But "upon request of the patient's friends" he may be committed to a private sanatorium; "but in no event shall such person be kept in any such institution for a period exceeding four months."

Section 1021 provides that "the two physicians" shall be paid $5 apiece for sitting on the commission. Apparently the third physician is rewarded with the customary fifty cents.

In cases of emergency, two physicians (without the judge or justice) may certify that a person is dangerously insane, and the superintendent of any State hospital or colony shall take him in, if petitioned so to do in writing by "some responsible person." (Section 1032). However, this section does not apply to cases of delirium tremens or drunkenness. And the patient can be held for only ten days. (Section 1033). The responsible person must within five days have the patient committed in the regular way, or else take him off the hands of the hospital, or else pay the hospital all the expenses of caring for the patient, plus fifty dollars. (Section 1035).

Section 1095h provides for the sterilization of inmates of the State hospitals and colonies whenever the superintendent of the institution "shall be of the opinion that it is for the best interests of the patient and of society." Before the operation can be performed it must be approved by the special board of directors of the institution and they must find that the patient and society have everything to gain and nothing to lose by the operation. Particularly, the board must find that the insane or feeble-minded person "by the laws of heredity is the probable potential parent of socially inadequate offspring likewise afflicted."

The Supreme Court of the United States has held that this law is constitutional because a rational person could regard it as a reasonable method of safeguarding the

public against potential injury: i.e., a rational man could regard feeble-mindedness as hereditary. However the Supreme Court recently (June 1, 1942) held unconstitutional an Oklahoma statute that provided for the sterilization of persons who had been convicted three times of a felony involving moral turpitude. The court doubted whether science had yet demonstrated that a propensity to steal chickens was hereditary.

One of the many interesting legal questions that nobody knows the answer to is whether a surgeon who sterilizes a patient at the latter's request is guilty of the crime of mayhem. A curious proviso at the end of the Virginia sterilization act purports to deal with this question but does not half answer it. The proviso, section 1095m, reads: "Nothing in this act shall be construed so as to prevent the medical or surgical treatment for sound therapeutic reasons of any person in this State, by a physician or surgeon licensed by this State, which treatment may incidentally involve the nullification or destruction of the reproductive functions." The proviso tells us that nothing in the act shall be so construed; but there is nothing in the act that could be so construed.

PHYSICIANS' LIENS

A man who repairs physical property like an automobile or a watch has a lien on it for his charges. This is called a possessory lien because he loses it if he lets the property get out of his possession. A doctor has no such lien on the body of his patient and cannot hold him captive until he pays his bill.

However, if the patient was injured by a wrongdoer, the doctor has a small statutory lien on the patient's claim against the wrongdoer. Section 1560(1) of the Code grants this lien to hospitals up to $200, to physicians up to $50 and to nurses up to $50. The doctor who wants to assert this lien must give written notice to the wrongdoer stating the name of the doctor, the name of the injured person and the date and place of the accident. The same notice should also be given to the patient's lawyer. The parties then cannot settle the case without taking care of the lien. If the patient sues the wrongdoer, section 1560(4) allows the doctor to file a petition in the case to enforce the lien instead of giving the notice to the wrongdoer and the lawyer.

When a patient dies without having paid his bill, the doctor should send it to the patient's personal representative. If the patient's estate is insolvent, the doctor's claim "not exceeding fifty dollars, for services rendered during the last illness of the decedent," is entitled to priority of payment. The amount of his claim in excess of $50 is paid ratably along with the decedent's ordinary debts. (Section 5390).

CONCLUSION

This brief survey of some of the laws of Virginia relating to physicians does not purport to cover all the laws that doctors are likely to be interested in. The great bulk of the law that doctors deal with comes within the field of "administrative law," namely, law that is made and enforced by official boards. In most of his contacts with these boards, the doctor is handed a printed blank to fill out. All he has to do is give the right answers. The statutes require him to have a legible handwriting, but that law, like a good many others, is seldom enforced.

Many of the statutes, like the ones forbidding people to spit on the sidewalk or to go to church with a cold, are obviously unenforceable, and nobody makes any effort to enforce them. Others, like the one forbidding doctors to give a cocktail party unless all the guests are "bona fide" patients who actually need liquor, are probably not meant to be taken too literally. Many, like the ones dealing with patent medicines and Christian Scientists, leave much to be desired. Our legislators are too subject to pressures from small but noisy groups. The best way to improve the laws relating to

the practice of medicine is for the doctors to form a large and noisy group. The doctors have done wonders in the last fifty years in raising the standards of medical education and in improving the laws relating to the public health. It is impossible to doubt that the gains already made will be kept and that there will be steady progress in the future.

THE YEAR'S ACTIVITIES IN THE MEDICAL SOCIETY OF VIRGINIA*

ROSHIER W. MILLER, M.D.,
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The incidence of World War I placed a check on the activities of the Medical Society of Virginia and, while no meeting was held in 1918, it was evident that in large measure the outbreak and spread of influenza was the causative factor.

Several suggestions were made that the meeting this year should be suspended as a contributing agent to the war effort. Several conferences were held with men in and out of the medical profession and the consensus of opinion was opposed to the suspension. It was, therefore, deemed best to continue the execution of the plans as scheduled.

World War II did, however, place many restrictions upon us but gave us duties, complex and otherwise (willingly assumed) that made us forget our negative ions.

The work has been conducted through the office by correspondence and such committee meetings as were possible. We have no apologies to offer, though, for the sins of omission and commission; we only bespeak your charity.

To you, my fellow members, the President desires to express his grateful appreciation for the privilege of serving you during the year just ended. We are not unmindful of the honor—not ungrateful for the opportunity.

For a little while our attention will center on some of the many activities of our organization.

During recent years, the specialties of medicine and surgery have greatly multiplied in numbers. These facts present a very normal expansion of the basic ethos of general medicine and this forward movement of its trend will not be dulled or checked. Analysis and more analysis—synthesis and more synthesis—bring out not only "better things for better living" but also a never-ending evolution in the domain of medicine for the bodily and spiritual uplift of mankind.

From this upheaval of the traditional practice has sprung with guinea pig fertility numerous societies with their individual interests and specialized needs.

However, the line of demarcation between medical subjects and those of surgery are not always acute, and oft and again specialists present interesting factors with a very definite line of cleavage in the fields of Internal Medicine and Surgery. In fact these two great fields are in large measure interdependent—the sharp divisions of yesterday do not exist, and it is steadily becoming more apparent that there is the need for a program so arranged that all discussions could be heard by a greater number of our members in attendance at our annual meetings. This, in our judgment, has become a desirable objective.

Definitely, of course, it would not be expedient at this time nor for the duration of the war to add more days to the session but, when normality and sanity are again our portion, we believe that scientific interest in the expanding achievements of tomorrow will call for an extension of our annual session.

We are persuaded that the plan of the Philadelphia County Society, which has met this situation, is sound and sensible.

On the social side exists the difficulty of arranging the various luncheons without conflict. We maintain that one of the most vital social contacts is that of the several alumni associations; college spirit, expressed loyalty, educational ideals, and the cultivation and maintenance of life-long friendships should become a major activity in these yearly meetings of our society.

To the end that a fine balance of opportunity, interest, and attraction, shall be provided for all the individual groups within our midst—the rural phy-

*Presidential address given at the annual meeting of the Medical Society of Virginia in Roanoke, October 5-7, 1942.

sicians, the city doctors, the college professors, the health officers of the state—the speaker suggests that a committee be appointed to give thoughtful and thorough consideration to a readjustment of the activities of our association to meet the trends so evident in the profession of our choice.

On occasion, in the not far distant past, our financial reserve had dwindled to a mere $500 bond. This should never again be permitted.

Depressions, wars, and epidemics result in greatly decreased revenues. A fair appraisal of our potential needs demands a reserve of at least $25,000.

While last year we had almost $20,000 to our credit, we should, without injury to our work, spend wisely, for we must expect some lessening of income from this moment to the adjustment period, following the conclusion of the world conflict.

Whether we call it an adjustment period or depression matters little—the society has felt and will again feel the pressure on our reserve.

Call it a Sinking Fund, Reserve, or Savings, we would urge that this first goal be set at $25,000. The interest on this amount would bear the larger part of the present cost of our educational program. If the investment should be in bonds with interest payable at maturity, the educational cost could be taken out of current funds and the amount charged against the bonds.

We believe that if the society were to aim for this fund, and achieve the result, its proven value would stimulate it to a second goal of $25,000 to endow the VIRGINIA MEDICAL MONTHLY, and insure it against any depreciation in its usefulness. If it marks time with progressive and scientific sister publications, as it has in the past, the journal of today, though splendidly edited and developed by Dr. Blanton, will be only a stepping stone in the pathway of science in a day not far distant.

It is our faith that funds so established would in themselves attract, even from our doctors, gifts of money.

Men, before giving, must be shown that an organization has vision, a definite aim, a workable plan, and that it is based on outstanding administration and worthwhile results.

The scientific advances of the future, in part, are hidden from our eyes but we may be sure that somewhere around the corner lie miracles in medicine, adventures in science, and astounding revelations in surgery. Their presentation as a type of post-graduate course of instruction to the doctors of the state will require more funds than are being used by the educational committee of today, and we must have foresight to provide cash to follow through.

If Uncle Sam had not put the kibosh on tires and gasoline during the past year, several of your component societies would have been invaded, and these pleas presented — results, either approval or you would have made "a center of your nose, a fulcrum of your thumb, and waved your four digits in fantastic figures".

Industrial health is on the march in a big way. The progress in this field has been so rapid, that whether we admire or approve the movement, the momentum it has gained in recent months can not be stayed. The industrial barons do not have to be sold on the issue—they are selling it to others—less accidents, more man hours—less sickness, more efficiency. Here is an activity that we should keenly observe and soberly study for, if civilization is to be saved in health, prolonged in life, and protected in spirit, the duty is definitely ours.

These and many other services will be ours. May we serve willingly, work hopefully, sleep peacefully, eat comfortably, sing joyfully, and in the meanwhile help to create that $50,000 reserve to finance in the future the work we want to do—in fact, the work we must do if we are going to have a part in the worthwhile work of tomorrow. If you have no heart for these services—well—"be uncomfortably quiet—be uneasily silent—be patiently unhappy".

Our scientific exhibits under the able direction of Dr. McGee have shown much improvement during the past few years. There is no doubt but that the exhibition could be greatly expanded if the guy rein of that enthusiastic and prancing mustang were removed, but we will agree that, for the time being, slight pressure of the curb bit is required. However, encouragement should be extended to our research workers and funds supplied to them to defray expenses incident to setting up and demonstrating their experiments.

We can not afford to lessen our contacts, even visual, with the panoramic developments in the fields of medicine, any more than an industrialist can in the mechanism and expansion of his manufacturing plant. If we be charged with entertaining impractical idealism, our counter is that there is no grass grown rut we desire to follow.

The professions of Medicine, Dentistry, Phar-

macy and Nursing have an essential bearing on, and relationship to, public health. We would not advocate an organic union of these organizations but we do sense the need for an interlocking pooling of our interests, in order for an effective righteous fight for measures to promote health, hope and happiness, for the physical and mental life of our charges—the citizens of the Commonwealth.

As a body we should do more than simply applaud from the galleries the approved work of the State Board of Health.

Potentially, we should function as a dynamic force with all the legitimate allies in medicine, in cooperation with the well organized health agencies of the State. With the manifest friendship of Dr. Riggin, and his sympathetic understanding of the attitude of the medical profession, we could aid in a material way in making a department of health agreeable to all—offensive to none. State medicine—the fear of the minority—could have no existence in a state where conference and unity of purpose is expressed—"one for all and all for one".

Then, too, in this connection we should not consign to oblivion the obvious influence of our women. They also have minds of their own, aside from their superior intuition. They can form, express and execute judgments that for breadth and depth equal those of the male gender. If any of you has doubts concerning this observation—don't speak out because before this war is over you will know it. The Woman's Auxiliary should be acknowledged as an organization of great possibilities. Encourage it, aid it, confer with it, and, with grace and frankness, accept some of its wisdom.

For acceptance of short time service to continue our work (due to resignations of a Councilor, several committee chairmen and committee members) we desire to express our appreciation for their loyalty and service, to Drs. H. B. Mulholland, Guy Fisher, J. W. Preston, and several others.

Through correspondence and actual work with our State Representative of the Medical Procurement and Assignment Board, it is our honest conviction that the primary work was concluded with honor to all, and with only a modicum of friction.

We wish in this presence to express our admiration for, and our congratulations to, Dr. Hugh Trout for his outstanding services in a difficult assignment.

We are quite sure of general agreement in the statement that, with few exceptions, no one gave more of himself during the past year than the chairman of the Legislative Committee, Dr. Dean Cole. The venture into the political arena was bold but not without fears. He was flanked on his right by an able attorney and the failure on the part of the Senate and House of Delegates to grasp the significance and amend the Medical Practice Act could not be laid on the doorstep of his committee. The fault, in large measure, was due either to the complacency of many of us who elected to "let George do it", or to our inability to impress our law-makers with the justice of our cause. The passage of an amendment to, or a substitute for, this act will require the aid of all the professions allied to medicine in the nine congressional districts. To practice any of the healing arts, with or without drugs, should require registration by and under the State Board of Medical Examiners.

The Board with limited resources and inadequate laws has wrought well, but even that able and valuable secretary-treasurer, Dr. Preston, will admit that they sail the boat—but it leaks.

The patients within this Commonwealth deserve the protection—the fair minded doctors demand it. If this be injustice, then let us fold up and return to the halcyon days of "patents", when Hostetter's Bitters for men, and Lydia E. Pinkham Compound for women, were the sovereign remedies.

Miss Edwards and Miss Watkins, who during the past twelve months have run the office and the president too, let me opine, did a good job. To them we acknowledge our obligation and confer our affection.

Dr. Emmett, should we trespass on your preserves on returning to Richmond, please be assured that it is habit, pleasing duties, the alluring atmosphere of the office, and not a desire to meddle with your administration!

In a recent editorial in *The Journal of the American Medical Association,* there appeared a statement that Virginia, with a few other States, had about completed its quota of medical men for the present service. To the men here and to those of our boys who are giving service throughout the world, we would speak of our pride in their expressed loyalty to an ideal, their patriotism under challenge, and their love of God, Country, Home and Liberty.

Recently in the City of Richmond, a debate was held on the subject "Is America All Out for War?"

in which the affirmative was taken by Dr. Douglas Freeman, Editor of the *News Leader*, and the negative by Eric Sevareid, a nationally known reporter.

We have referred to the fine offer to medical service by the doctors of the State. They are "all out for war"; the medical colleges, universities, and academic colleges, with their accelerated programs, are "all out for war"; the high schools, junior high schools, yea, the elementary schools, have this session joined in the "all out for war".

In this fine effort we would plead that the doctrine of hate be not taught. It is unwise and damaging exercise of the emotional centers under the influence of which the finer abilities cannot find expression.

The prize-fighter on entering the ring would endeavor to repress hate—the contestant in a race would keep it in check because its exhibition would lessen the chances of winning.

The Lowly Nazarene in the Temple gave an illuminating example of righteous indignation and the power and efficiency of calmness and deliberation.

That we may not be charged with weakness in this hour of conflict, we propose a moratorium on the application of the Golden Rule for our enemies and substitute its modification by David Harum—"Do unto others as they would do you, but do 'em fust."

All peoples of the Allied Nations are surely dedicated to the destruction of the evil powers of the three P's—the paranoic Hitler, the parasite Mussolini, and the psuedo son of heaven, the Mikado.

In our childhood we were thrilled by the stories of the Spartan mothers, the glories of Greece, and the powers of Rome, but today there is left to us only the Glory and Power of Democratic Freedom—"we can, we will, we must" preserve it.

THE MANAGEMENT OF RECENT FACIOMAXILLARY AND MANDIBULAR FRACTURES*

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The management of recent fractures of the nose, sinuses, and jaws has become a real problem with the development of high speed transportation. The automobile is largely responsible for the great increase up to the present time, and the airplane and war injuries bid fair to create a still further big increase in the future. Because of this impending increase in injuries of this nature, it has seemed timely to discuss the fundamental principles involved in this problem and to outline the essentials of diagnosis and treatment.

No attempt will be made to treat the subject in detail; to do so would result in a monograph for this limited subject alone; and still the associated injuries of the brain, skull, eyes, ears, teeth, and neck would be untouched. For further information in regard to this subject, the various books, monographs, and articles already available should be consulted.

Because of his familiarity and detailed anatomical knowledge as well as his knowledge of the diagnosis and treatment of diseased processes in this field, the responsibility has largely fallen on the otolaryngologist to take care of these serious injuries; and whereas the responsibility is his, he must frequently call upon the surgeon, neurosurgeon, orthodontist, dentist, and ophthalmologist, for their combined special knowledge is often necessary in the treatment of these injuries.

The initial treatment is largely concerned with the control of hemorrhage, either by local packing or ligation of bleeding vessels, or perhaps ligation of an efferent artery at some point distal to the wound. The treatment of surgical shock is next in importance. Lack of consideration of shock may well lead to the death of the patient. One should also consider the type and condition of the wound, for this is the time to administer tetanus and gas bacillus antitoxin, always with due regard for the patient's sensitization to the serum.

The preliminary examination should be carried

*Read before the Virginia Society of Ophthalmology and Otolaryngology, Staunton, Va., May 16, 1942.

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out in great detail, for it may well be that some neurological, general surgical, or orthopedic condition may be of primary importance.

Granted that none of these conditions present themselves, we may continue with our own consideration of the problem. First, inspection will tell us whether deformity is present, and palpation will give us its type and degree as well as what procedures will be necessary in repair. Transillumination of the sinuses may be sufficient in the less severe cases; otherwise, Roentgen ray studies are necessary. While it may be true that the multiplicity of lines and shadows in this region makes interpretation difficult, still careful examination and measurements will show clearly the type and degree of fracture present and the presence of blood or infection in the sinuses.

Complete repair can usually be done at this time, but in some instances we must be content with temporary repair after due consideration of future plastic procedures. When this is true, it is important to conserve as much skin, mucous membrane, and viable bone fragments as possible, for instance, the suturing of skin to mucous membrane, the anchoring or transposition of viable bone fragments, the maintenance of adequate blood supply, as well as the accurate apposition of wounds' edges of the eyelids, vermillion border of the lips, and the fixation of the alae of the nose at the proper level.

Debridement and mechanical cleansing of the wound should best be done as early as possible, and the use of a stiff brush with soap and water may be necessary to eradicate foreign material from the skin.

Local anesthesia is usually sufficient, using cocaine or some of the newer synthetic preparations for topical application to mucous membranes and procaine subcutaneously either as local infiltration anesthesia or as regional nerve block. If general anesthesia such as gas, ether, avertin or pentothal sodium is used, the danger of vomiting after wiring of the teeth should be considered.

When infection is present or has set in, cultures should be promptly obtained, because of the danger of vascular thrombosis and osteomyelitis from the staphylococcus, and adequate drainage should be established along the usual lines.

It is most important that the proper sulfonamide drug should be given in adequate doses systemically and used locally in all cases. This constitutes the biggest advance in the treatment of these injuries in recent years. However, the importance of antitoxic sera, toxoids, and blood or plasma transfusions must not be overlooked.

After due consideration of all preliminary studies, the time of repair must be considered in regard to swelling and the patient's general condition. As a rule, these fractures can be readily reduced up to a week or ten days; yet the earlier education is accomplished, the better.

It should be remembered that all of these fractures are compound in that they communicate with the outside world either externally or internally through the sinuses, nose or mouth, so that due regard to existing or subsequent infection must be considered. Fortunately the high degree of tissue immunity present and the use of sulfonamide drugs both systemically and locally minimize this danger to a large extent.

The essential details of treatment will be discussed under each particular structure. Generally, we might say that it largely resolves itself in the reversal of the fracturing force with adequate fixation of the fractured parts and at the same time suture, debridement, and restoration of the soft parts to re-establish function and prevent deformity.

The External Nose

The rigid elements are composed of the nasal bones and the nasal processes of the maxillae, except in a few cases of congenital variation. The remainder of the nose is composed of resilient cartilage, and except for dislocation and displacement at its bony junction it very seldom enters into the deformity, so the problem largely resolves itself into reduction of the displaced bony elements by reversal of the fracturing force. Since the deformity is evident, firm pressure with the surgeon's thumbs will readily correct the dislocation, and the result will be immediately ascertained; in some instances it may be necessary to employ an elevator intranasally, or the Adams' forceps, especially in those cases where there is a depression of the bony parts.

Reduction is usually accompanied by a sharp click as fragments assume their normal position, and seldom is splinting necessary. We merely depend upon a piece of adhesive across the nose, with or without a small roll of gauze underneath, to remind the patient and his friends that the nose

should not be touched during the healing period.

In the more severe cases of compound fracture, there may be an actual loss of bone and soft tissue. It is in the immediate repair of these cases that one should consider future plastic work, such as the introduction of rib cartilage, tube grafts, the conservation of skin and mucous membrane, and any viable bone fragments; therefore, each case is a law unto itself, and only general principles need be regarded.

Debridement should be carefully done in all lacerated wounds, and the proper placing of subcutaneous catgut and skin sutures will materially lessen deformity and scar.

The Nasal Septum

The septum is practically always involved in all fractures of the external nose; and in many instances, when there is no evident fracture of the external nose, even infants and young children often present deformities of the septum which can only be explained by blows on the nose, which were disregarded at the time, and then forgotten. These injuries undoubtedly account for many of the septal deformities seen in later life.

When one considers the component parts of the septum, namely, the perpendicular plate of the ethmoid, the vomer, the septal cartilage, and the vomeronasal cartilages, he readily understands why blows on the nose produce deformity at the junction of the vomer with the other septal parts. Unfortunately, even when this condition is recognized at the time of the injury, very little can be done to correct it, because of the resilience of the cartilages. They are nearly always very difficult to reduce or to hold in place after reduction, so, in spite of our best efforts, we must often depend on future submucous resection to restore function.

Hematoma is often found after these injuries, and should be drained by incision through the mucous membrane, for otherwise it tends to become infected or to heal with a resultant fibrous mass of scar tissue, which produces obstruction to aeration. The use of a suction tip to aspirate the blood and a small punch to remove a button from the mucous membrane insures constant drainage.

The Frontal Sinus

Fractures involving the frontal sinus are potentially the most dangerous of all, because of the anatomic relationship to the brain and meninges. It is not uncommon to find these fractures extending into the vault or base; hence, neurologic vigilance is essential. Fractures into the orbit are also frequently seen, which menace the important structures contained therein.

As complications, we may look for meningitis, brain abscess, orbital abscess, and osteomyelitis as the most serious, and it is primarily to prevent these that early and adequate treatment is of such importance and the systemic and local use of a sulfonamide is so necessary.

It should always be borne in mind that fracture here may involve the anterior wall, the posterior wall or both. Therefore, doubtful cases should be explored surgically to determine the exact extent of injury, to remove bone fragments, and to institute adequate drainage.

When the wound is open externally we are usually able to inspect the sinus through the original wound. Otherwise, we advise the usual curved incision through the unshaven brow, and inspection by removal of the floor of the sinus, which leaves very little scar and no deformity. It is only by adherence to this apparently drastic principle that we can prevent future serious complications.

When it is found that the fracture involves the anterior wall only and presents no deformity and no injury to the integument, no treatment may be necessary other than close observation during the healing stage.

Blood clot may be present within the sinus in many cases, but it may also be readily absorbed, and need not be considered a cause for worry. However, if at any time during the healing phase we should become doubtful as to the condition of the sinus, we should advise exploration.

When a frontal sinus is explored either externally through the original wound or by operation through the brow, we should carefully remove all blood clots and loose fragments of bone, then inspect the posterior wall for possible injury, and see that adequate drainage is established, either externally if the original wound is suitable, or, preferably, intranasally by a rubber tube inserted through the nose to the depths of the sinus, and allowed to remain *in situ* for from ten to fourteen days.

In the presence of large anterior defects, external drainage is justifiable, conserving all bone and peri-

osteum possible to prevent deformity. In all other instances, we advocate intranasal drainage.

When the posterior wall is found to be involved, the entire mucous membrane should be carefully removed and the edges of the fracture carefully inspected. In these cases, our procedure is analogous to similar situations encountered in mastoid surgery —that is, to remove bone fragments from the dura and to enlarge the defect until we are sure we have healthy or rather uninjured dura. Should the dura be torn, external drainage is imperative, and communication with the nose is blocked off by packing in the region of the ostium. After nature has walled off this area, we may do a secondary closure of the external wound and concern ourselves with the cosmetic result.

Suturing dural tears, and in some cases the interposition of fascia lata for spinal fluid leak may be necessary. When the posterior wall is fractured but the dura is uninjured, our procedure is the same, except that we employ intranasal drainage. All patients with fractures involving the accessory sinuses should be cautioned about blowing the nose, to prevent interstitial emphysema and pneumocephalus, but this warning is particularly important when the frontal and ethmoid sinuses are injured.

As has been previously stated, neurologic vigilance is important. It might be added that bacteriologic vigilance is also important, not only to prevent infection but to determine the type, should it occur. In our experience with brain abscess and osteomyelitis, the staphylococcus is nearly always the offending organism. We are constantly on watch for it, in order to protect our patient as early as possible by chemotherapy and the use of staphylococcus toxoid.

The Ethmoid Sinus

The ethmoid is involved more often than any other sinus, and while the potential danger of complications is great, fortunately we do not meet them as often as in frontal sinus fractures.

The relationship to the brain and meninges and the orbit must be remembered, and it is of particular importance here to caution the patient against blowing the nose, because of the likelihood of creating an interstitial emphysema or pneumocephalus, and thus increasing the danger of meningitis and orbital infection.

Fractures through this region seldom present much deformity, so correction of the external nose deformity in the milder cases is usually sufficient. In those of severe injury with loss of tissue, we can restore some order by working through the external wound; and in those of transverse facial fracture, through the ethmoid and orbit. Apposition is obtained by anchoring the whole fragment either by wiring or with dental braces anchored to a plaster skull cap.

Nature has wisely furnished an abundant blood supply to all of the nose and face, and with the high degree of tissue immunity to infection also present, many discouraging cases often heal with surprisingly good results.

It may be necessary to remove sequestra or to drain a few ethmoid cells at some later date, either externally or intranasally. However, it is usually a comparatively simple procedure, and a good final result is obtained.

The Sphenoid Sinus

Due to its protected position, fracture of the sphenoid bone is fortunately rare, except in the most severe injuries. Then it is more likely that the greater and lesser wings, or the pterygoid processes, in some transverse facial fractures, are involved; and the other problems presented in severe injury overshadow the problem of the sphenoid.

Penetrating wounds, such as those caused by sharp objects and bullets, do occasionally involve the sinus itself, and it may be necessary to search for foreign bodies or to see that proper drainage is instituted.

One must bear in mind the intimate relationship of the sphenoid and posterior ethmoid sinuses to the optic nerve, for we have occasionally seen optic nerve atrophy follow injury to the head, which could only be accounted for by fracture in this region which was not recognized at the time.

Maxillary and Malar Bone

These two bones are so intimately associated that fracture of one very often extends into the other, and in either case the maxillary sinus and orbit are usually involved.

The malar bone forms the most prominent part of the face and is therefore most frequently injured; and since it articulates with the maxilla, the frontal, the zygomatic process of the temporal and the sphenoid, its attachment is essentially weak and dis-

location easily takes place. By studying its location and shape in the dry skull, we can visualize the result of blows from various angles.

The maxilla largely houses the maxillary sinus, and also forms a prominent part of the face, so is likewise subject to frequent fracture. This may take place from extraction of teeth, from direct blows of a crushing nature over the body, from blows on the front of the face producing transverse facial fractures, either through the alveolus, the nose and bodies of the maxillae or through the orbits. Blows on the nose often fracture the nasal processes of the maxillae and blows on the malar secondarily involve it.

Diagnosis largely rests on inspection and palpation, aided by our knowledge of anatomy and mechanics. Roentgen ray studies are very valuable here, and no attempt at reduction should be made until the films have been carefully studied and a mental picture of the deformity firmly impressed on our minds.

In nearly all cases, we find the sinus contains blood clot. In simple cases with no deformity, it will frequently be absorbed in a few weeks, and it is unnecessary to wash the clot out, unless infection takes place.

In the more severe cases, we are in no hurry to irrigate the sinus, preferring to wait until Nature has walled off all fracture lines before doing so. Usually four to six days are sufficient; then we run no risk of introducing and spreading infection. In other cases that are infected in which we wish to use an intranasal route to reduce dislocations, we are content with a large drainage opening in the inferior meatus, for the time being, and only employ irrigation after the four to six day interval, and if possible the natural or one of the accessory ostia should be employed.

Treatment, of course, depends on the type of injury. Generally it is a question of reversal of the fracturing force by whatever method happens to be best suited to the particular case and the prevention of deformity.

Fig. 1—a. Front view of basic appliance included in plaster head band. With this applicance immobilization or traction may be instituted as indicated. b. Side view of basic appliance.

The orbital rim must be restored as well as the contour of the orbit; so in certain cases it may be necessary to make an incision along the rim to restore contour, to remove blood clots from the orbit, or to drain orbital abscess. In comminuted fractures of the anterior wall where there is an external wound into the sinus, we may be able to work through this defect, removing clots and fragments and utilizing all viable fragments in restoring contour, after which the external wound is carefully repaired and intranasal drainage instituted. In other cases we employ the external Caldwell-Luc approach; and if packing should be necessary to retain the position of fragments, the pack should be impregnated with a suspension of sulfadiazine powder.

The reduction of dislocated malar bones and zygomatic processes is usually readily accomplished in several ways, when there is no external wound or

when external incision is not necessary, by the towel clip method of Gill, the hook under the process, the intraantral method of Shea or by the method of Gillies.

The correction of transverse facial fractures is usually best achieved by wiring the teeth and the application of various orthodontic appliances anchored to a plaster skull cap.

In high transverse facial fractures through the orbits, Gill wisely advocates wiring of the zygomatic process of the frontal to the frontal process of the malar by open operation, which should be a logical and useful procedure in many cases. Wiring of fragments is necessary in many instances of fractures about the face, as it gives firm anchorage and materially shortens convalescence. Fractures through the alveolar border and hard palate, involving the teeth, frequently accompany these severe injuries, and the orthodontist and dentist should be called upon in all these cases to correct deformity and to restore function.

MANDIBLE

Fractures of the mandible are probably handled more often by the general surgeon from necessity than by any other group. However, they are encountered often enough in combination with upper facial fractures by the otolaryngologist to be included in this presentation.

Mandibular fractures occur more frequently than those of the maxilla, but, as a rule, are less dangerous to the individual and are easier to handle. The recognition of the fracture is usually not difficult. The history of trauma plus pain, swelling, tenderness, displacement of the fragments with associated malocclusion of the teeth, and abnormal mobility of the part, make the diagnosis apparent. In considering the displacement of the fragments, one must keep in mind the type of fracture line and the influence of the attached muscles with the forces exerted therefrom.

The most frequent sites of the fracture line, according to a number of observers as quoted by Padgett[1], are at the angle and mental foramen, the condyle, symphysis, ramus, and coronoid process being rarely involved. Also, one-third of the fractures are double, for instance, at the angle and mental foramen.

An important consideration in treatment, as noted previously in fracture of the maxilla, is that most mandibular fractures are compound. A break in the mucosal tissue occurs in the edentulous as well as those having teeth. Before the advent of such drugs as sulfadiazine and sulfathiazole, dependent drainage was always established. Now the mentioned drugs are administered locally and internally with less emphasis on the incision for drainage; however, good drainage always is of paramount importance. Needless to say, no wound in the floor of the mouth should be closed with sutures. Loose teeth in the line of fracture should be removed unless they may be of some temporary value in immobilization. Other parts with the slightest chance of viability should be left *in situ*.

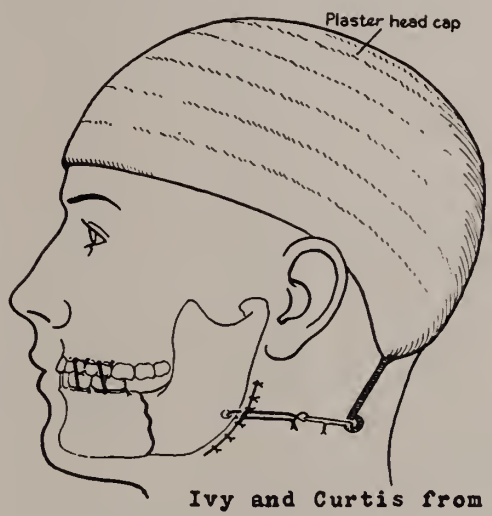

Fig. 2.—Illustrating method of obtaining external traction and intermaxillary wiring. Note the effective backward traction on the edentulous posterior fragment.

It is impossible here to take up the treatment of all the types and various combinations of fractures of the mandible. Only the most common ones will be considered. The object in treatment is to obtain a good alignment of the teeth with a satisfactorily functioning mandible as the end result; and in perhaps 90 per cent of the cases this can be accomplished by simple immobilization of the mandible by attaching it firmly to its counterpart, the maxilla. When the fragments are in good position and apparently will remain so, then often no fixation other than a modified Barton's bandage will be needed plus careful instruction to the patient concerning the limitations in the use of the jaws.

As mentioned, the larger number of fractures occur at the angle and mental foramen; and also, in the majority of cases, teeth will be present in the upper and lower alveolar processes. Given this

condition, the most satisfactory and the simplest method of immobilization is interdental wiring of the fragments and then in turn splinting these by wiring to the teeth of the maxilla (inter-maxillary wiring, see Fig. 3). A frequent modification of the

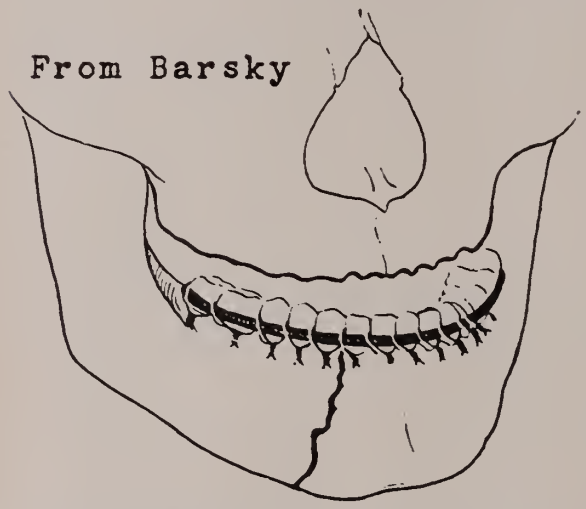

Fig. 3.—Illustrating use of half-round arch wire when there are teeth in each fragment of the mandible but none in the maxilla.

above method is the attachment of a half-round arch wire to the teeth of each jaw by wiring to the individual teeth and then connect the upper and lower band by additional wiring or by the use of rubber bands, depending upon the desired position and traction (see Fig. 4).

With the absence of teeth in a fragment, a supporting splint of dental compound may be devised and used as a support for the edentulous fragment (see Fig. 5). If each jaw is edentulous, then the problem becomes more difficult and calls upon the skill and ingenuity of the dentist in the preparation of the proper stents which may or may not be attached to the bony parts by wiring (circumferential wiring) around the stent and mandible. There occurs rarely in fracture of the mandible displacement of a fragment which requires external traction of some type to retain the post-reduction position. This may be accomplished by making a small skin incision to expose the desired portion of the fragment, boring a hole and attaching thereto a silver wire leading to the outside. This wire may be adjusted to the basic appliance as in the illustration.

In the rare fractures of the condyle, the fragment may be displaced, resisting any attempt at reduction. As Figi[2] points out, simple immobilization by intermaxillary wiring almost invariably results in a good functioning part. Apparently open reduction is seldom necessary, and ankylosis is a rare complication.

Fracture of the coronoid process requires no special attention other than the usual immobilization.

Complications such as osteomyelitis and cervical infection are cared for by adequate drainage and chemotherapy. Non-union of fragments is due to the expected causes, such as unsatisfactory immobilization and alignment, osteomyelitis, and tooth fragments in the line of fracture. Correction of the cause will result in proper healing.

This discussion of mandibular fracture does not consider in detail or many of the problems which may be encountered. An attempt only is made to consider the more frequently encountered problems which should be handled as soon as possible after the injury.

Immobilization should be carried out in fracture of the facial bones for a period of from three to six weeks. The usual period is from three to four weeks.

In our limited experience, we have found that stainless steel wire has been the most satisfactory to work with. Soft stainless steel ligature wire (No.

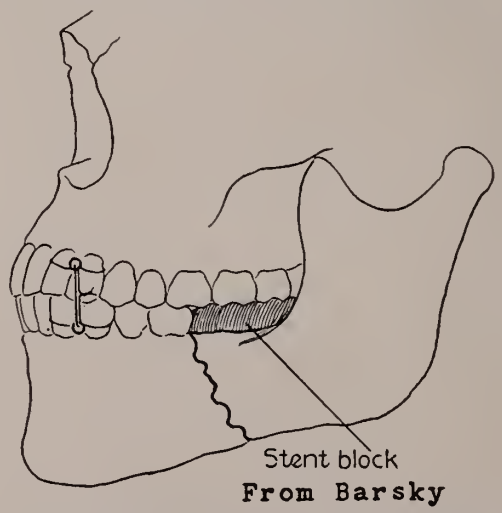

Fig. 4.—Stent block to prevent the edentulous posterior fragment from overriding. Stent block may be fastened in place by circumferential wiring in some cases.

.016) is used for interdental and intermaxillary wiring. A heavier, hard wire (No. 10) of the same type is preferred for the half-round arch wire. For traction purposes and circumferential wiring, silver is used (No. 16-18). Brass wire (No. 22-26) may

be used also for interdental and intermaxillary wiring.

For the more detailed consideration of the mandibular fracture, one should refer to writings by Barsky[3], Blair[4], Ivy[5], and Padgett[1].

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CHRONIC PROSTATITIS
A CLINICAL REVIEW OF 100 CASES IN WHICH THE FRESH AND PEROXIDASE STAINED SECRETIONS WERE STUDIED

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Modern urological practice is becoming increasingly physiological and decreasingly pathological. In no field of medicine is the ideal of securing and maintaining physical, sexual and psychic efficiency greater than in the urological segment. This change in emphasis necessitates the most careful searching for the causes of the departure from health and the treatment and counselling of the patients which will control symptoms and prevent re-occurrence.

The prostate is an organ of interest to physicians for various reasons: (a) it is a part of the sexual apparatus; (b) it may be the site of malignancy; (c) it can be a focus of infection; (d) and is readily reached with the examining finger and suitable instruments.

The prostate may become infected in a number of ways: following gonorrhea; bacteria descending from the kidney or bladder; by retention of urine whether due to stricture or prostatism; by foreign bodies introduced from without or calculi lodging in the prostate; by metastasis from acute infection of the upper air passages, tonsils, teeth, and influenza. Keyes* states that prostatitis in youth is caused by gonorrhea and sexual strain; in middle life by influenza, pyelonephritis, urethral stricture; and old age by pyelonephritis, prostatism and influenza.

The patients with chronic prostatitis may be segregated in three groups as they follow a fairly uniform clinical pattern in their symptomatology. In the first division will be found those patients in whom urinary symptoms predominate. The usual complaints will include urethral discharge, frequency, urgency, nycturia and burning. There were fifty-four patients in this group. In the second section will be found those cases in which the prostate may be the silent source of infection to distant parts of the body. These patients complain of low back pain, stiffness and pains in the joints, muscular aches and discomforts, and fatigue. In these cases the teeth, tonsils and sinuses are often considered as foci of infection long before the prostate is suspected. The general practitioner is becoming more prostate conscious and it is hoped that in the future many patients will be spared their teeth and tonsils at least until the genitourinary system has been thoroughly investigated. There were twenty-two patients in this division. In the third group will be found those patients with symptoms which are referable to sexual dysfunction. They complain of lack of sexual desire, premature ejaculations, incomplete erections, vague pains in the urethra, perineum and testes, and a mucoid urethral discharge especially in the morning hours. These patients are emotionally unstable, readily depressed and are extremely difficult to manage. Their symptoms are wholly of a functional nature. There were twenty-four patients in this group.

*Keyes: Urology. D. Appleton and Company, 1928. Page 181.

We have carefully studied the records of 100 unselected cases in which a diagnosis of chronic prostatitis was made and reviewed the treatment failures in the light of our successes. This we believe to be healthy discipline as through our blunders we will improve our treatment and guidance techniques. The ages of these patients were from 20 to 70 years, the average being 40. There were 63 who were single, 32 married and 5 divorced. Of the group 57 admitted one attack of gonorrhea; 6 had suffered 2, 3 had 4 infections and 4 acknowledged 4 infections. There were 30 patients who gave no history of a venereal disease. The records of 31 patients showed they had received treatment for prostatitis and 7 for stricture. There were 5 patients who had been treated for syphilis.

The most frequent complaints recorded were urethral discharge in the morning upon arising; 54 patients gave this symptom, pain and burning on urination in 73 and frequency and urgency in 28. Several patients had 2 or more symptoms. In 30 patients the first specimen of urine was hazy to cloudy and in 10 both specimens were abnormal. In 4 patients there was retention and of these 2 were 71 years old and one each 54 and 40 respectively. In 28 patients the prostate was enlarged and 5 were found to have a chronic epididymitis. The size of the prostate apparently bears no relation to its pathological condition as we have observed large prostates in small men which were apparently normal and small prostates in large men which were highly infected. Enlargement of the gland posteriorly is more difficult to estimate and record accurately. The vesicles should be palpated if they can be reached and, if everything seems favorable, massaged lightly. The fresh prostatic secretions are examined by the cover glass method with the high power dry objective by the physician making the physical survey and he records the average number of pus cells observed in several fields from 5-10%, 10-20%, and so forth. We regard any patient with a persistent white cell count of 10% or more as having prostatitis. There are a number of patients with high leukocyte counts early in their treatment whose slides rarely ever show less than 10% pus cells per field. In these patients we endeaver to control symptoms and avoid over treatment. As a part of our clinic procedure we examine the prostatic secretion at frequent intervals and treat patients twice a week, and after three weeks of treatment a progress survey is made as a routine practice.

Recently we have compared the results of the fresh with the peroxidase stained prostatic secretions and to our surprise the laboratory reported a much larger average of pus cells than was found in the wet specimens. The reason why the staining method is more accurate is the ease with which the polymorphonuclear-leukocytes and lymphocytes are recognized in the spreads and a larger number of fields are examined and the cells counted. The blue granules in the nuclei of the leukocytes stand out boldly within the cell and they are easily identified. Comparing the number of leukocytes and the lymphocytes also insures a higher degree of accuracy in the procedure. In patients in whom the fresh specimen showed only 10 or more pus cells per field when stained and a minimum of 200 cells counted, the percentage of leukocytes was doubled or tripled and in those patients in which the fresh specimens showed a larger percentage of leukocytes the laboratory reported a concomitantly higher number (chart). There was 17 cases in this series

CHART

Of the entire group the prostatic fluid was found to contain pus cells in the following amounts:

FRESH SPECIMEN		PEROXIDASE* STAINED	
5 per cent or less	22	5 per cent or less	22
10-20 per cent	48	30-40 per cent	19
20-30 per cent	13	40-50 per cent	18
30-40 per cent	8	50-60 per cent	20
40-50 per cent	9	70 per cent	21
	100		100

in which only an occasional leukocyte was found and 5 cases showed only a rare lymphocyte. The peroxidase method is by far a more accurate procedure but an examination of the fresh secretion by the experienced physician offers no difficulties in mak-

*THE PEROXIDASE STAIN: This stain depends on the presence of an oxidizing ferment in the cells of the myeloid series and is used to distinguish these cells from those that contain no such ferment, such as the lymphocytes. The cells that react positively to this stain include the premyelocytes, myelocytes, and other cells of the neutrophilic series, eosinophils, basophils, and adult monocytes (endotheliocytes, large mononuclear, transitionals). Myeloblasts do not give a positive reaction to this stain.

With this stain the red cells are pink, the lymphocytes are red, and the granulocytes and other peroxidase positive cells are stippled with blue black granules with exception of the myeloblast.

Textbook of Clinical Pathology, Edited by Roy R. Kracke and Francis P. Parker. The Williams & Wilkins Company, Baltimore, Md. 1940, Page 17.

ing a diagnosis. It has been suggested that the cells which are identified as polymorphonuclear-leukocytes in the fresh prostatic secretions are not blood cells but conceivably portions of the protoplasm of the functioning gland cells. In certain special tissues of the body, the thyroid for example, this ptycrinous function is physiological but there is no proof that the glands of the prostate perform in this manner in health or disease. In pathological specimens a rupture of the gland cell wall in which protoplasm is extruded into the acinus has been observed, but to interpret this as a physiological process does not explain the frequency of the diagnosis of chronic prostatitis.

In the first group mentioned above pathology is usually discovered and proper treatment often controls the symptoms and restores normal function. No rigid rules for therapeutic measures can be laid down as patients vary widely in their reactions to the various forms of treatment which are at times necessary. In many patients massage accompanied by instillations or urethral irrigations brings prompt relief of symptoms. A few patients are so sensitive to urethral instrumentation that it is hazardous to attempt it. Certain chronic changes in the prostatic urethra may result in bleeding following massage. The repeated presence of blood, even though microscopic, calls for the most complete, expert study of the entire urinary tract. We have not used any of the radical methods of treatment such as injections of medicaments into the gland or the inductotherm. Various other procedures have been suggested with indifferent results.

The second group of patients mentioned above are those in whom the prostate is the focus of a silent infection and manipulation of the gland often causes an immediate increase in symptoms at a distant point. Such a reaction is conceivably due to the liberation of toxic products within the economy but at the same time there is an increase of antigenic substances in the blood stream which aids in the control of the condition. The acute exacerbation of symptoms is considered proof that the silent area of infection has been discovered and disturbed. Many of these patients are greatly benefited and relieved of their symptoms by massage of the prostate but the treatment should be conservative as repeated reaction from the local procedures will prolong the period of disability.

The third group mentioned comprises those patients whose complaints are on a sexual basis and they are many and varied, but the dominant condition is sexual dysfunction. In taking the history of one of these patients a diagnosis can be made immediately, for he will discuss his complaints in minute detail and the symptoms are so bizarre that were they of organic origin dissolution would be momentarily expected. In only a few of this group will pathology be discovered or urological treatment be of permanent value.

These patients are among the most difficult which come to the understanding urologist. Some of them will plead for treatment long after massage, sounds, irrigations and dilatations and other procedures have been tried without bringing relief of symptoms. The pathology which may have been present on admission is not now discoverable but the patient will separate the meatal lips or strip the urethra and point to a secretion, or he will explain a train of symptoms which causes constant discomfort and worry. Treatment brings little relief. Many of these patients are single and proper sexual and social hygiene should control their complaints but a number of them will fall back upon the thought that they are incapable of performing the sexual act. These introspective ones have a fixed idea that they are losing seminal fluid and unless they are cured of their ailment they will become impotent and sterile. An occasional patient may think he has a disease and is thereby a constant danger to himself and any sexual partner. Several of our patients have been psycho-analyzed without permanent benefit. We have advised marriage in selected cases, hoping that the companionship and responsibilities of family life would strengthen their will and aid them in overcoming these seemingly unsurmountable difficulties. The management of these patients requires the patience of a Job, the persuasive powers of an evangelist and the scientific guidance of the most skilful physican.

There is one very strange fact in the consideration of prostatitis and that is rarely does the urologist have a negro patient with the condition. Is it due to proclivity of the negro to seek and satisfy his normal racial physiological urge, thereby preventing minor irritations of the gland? Our negro patients who are found to have prostatitis complain of "lack of nature" and the inability to copulate

satisfactorily. With them the condition is not loss of desire but the absence of satisfactory erections. We expect a man to admit that his stomach is weak or that his mind isn't what it used to be, but he loves to delude himself that his sexual powers are both indestructible and immortal. The treatment of chronic prostatitis has not changed fundamentally in the past 35 years when Fuller advocated massage of the organ for the cure of infection. In addition to stroking or rubbing the gland, heat, irrigations, instillations, instrumentation, foreign proteins and sexual hygiene are of proven value in the management of the condition. There is no question that proper sexual hygiene accomplishes more than massage but married men too may have prostatitis.

The prostate and vesicles are sexual organs and produce the bulk of the seminal fluid, and when the former is inflamed its function must be held in abeyance for an ejaculation is a harmful trauma. When the inflammation becomes chronic, resumption of its normal function is the basis of cure but there are social and other considerations which interfere with this principle in practice. A constipated movement of the bowels will often press out more secretion from a boggy prostate than the finger can and the best that massage of the organ can offer is the alleviation of symptoms until normal sexual relations are resumed. Keyes* has pointed out that sexual starvation and excess are as bad for the chronically inflamed sexual organs as constipation and gluttony are for the chronically inflamed digestive organs.

The object of massage is to reduce the amount of pus in the secretion and restore the function of the gland and thus relieve symptoms. The results of treatment are evaluated by frequent examination of the fresh and stained secretion under the microscope. Progress in the control of the infection is observed in the disappearance of pus cells in clumps and the appearance of lecithin bodies in the secretion. When the lecithin bodies out-number the pus cells further improvement will depend on proper sexual hygiene. Massage of the prostate is then repeated only at intervals to serve as a check on progress and long months of massage will not remove the last pus cell. Often the leukocyte count will show 10 or 15 cells per high power field and no amount of massage or other measures will reduce this. The ideal in sexual hygiene is the happily married man who satifies his sexual desires in a natural way when he has the urge. In the single man this is an unattainable ideal. Treatment of the prostate should not be administered oftener than twice a week and as the pus cells diminish in the secretion and lecithin bodies increase the intervals between visits are increased. In some patients the subjective symptoms are quickly relieved and the period of treatment and observation is short, but many of the patients require weeks and months of care and progress is slow. In an occasional patient very light stroking of the gland causes a disturbing reaction and there will be frequency, urgency, nycturia, cloudy urines and general malaise. In these patients omission of all local therapy and subcutaneous injections of foreign proteid, hot hip baths, rest and the symptoms usually subside. In rare instances a light massage will precipitate an epididymitis and where this complication arises the gland should not be rubbed for at least four weeks after the second urine becomes clear. The patients with large irregular firm prostate yield slowly to treatment as there is an associated periprostatitis which prevents the emptying of the glands. The soft, boggy organs respond rather promptly to massage and the leukocytes in the secretion are often high.

In this series of cases, 14 were under treatment or observation from four to eight weeks, 20 from eight to twelve weeks, 18 from twelve to sixteen weeks, 8 from sixteen to twenty weeks, 29 more than six months and 11 were treated for twelve months or more. In this latter group there are a few who have received so much benefit from treatment that they report once a month for an examination, thinking that should their prostatitis return it would be discovered early and any disability prevented. We discourage this practice as there are no preventive measures which will prevent reinfection but the patients consider these urological surveys as a form of health insurance and have so informed us. The results of treatment, when considered from the patient's point of view and the clinical findings, have been good. Of the 100 diagnosed cases 60 were completely relieved of their symptoms and the prostatic secretion contained less than 10 per cent white blood cells per microscopic field. In 24 cases the objective and subjective symptoms upon dismissal were greatly improved but the pus content in the

fluid was variable but never less than 10 per field. There were 16 patients who were unimproved and all of these were sexually deficient and suffered from a dysfunction. No pathology of the genitourinary system was discoverable by any procedure.

SUMMARY

From a series of 100 cases of chronic prostatitis a clinical study has been made in which the patients were considered in three categories, viz., those in which the urinary complaints predominate, those in which the prostate is a silent source of infection, and those whose symptoms are on the basis of sexual dysfunction. The ages, gonococcal and other infection and complaints on admission are recorded. The comparison of results of the examination of the fresh and peroxidase stained secretions are shown in tabular form and it is demonstrated that by staining the prostatic fluid a more accurate appraisal of the cellular content is made. An explanation of the action and the appearance of the stained cells as described by laboratory experts is quoted. The several methods and the results of treatment are set forth. In this series 84 per cent of the patients were relieved of their symptoms. The patients whose complaints and symptoms were of a neurogenic nature—sexual dysfunction—did not respond to therapy. This is the most difficult class of patients that consults the urologist.

CONCLUSIONS

In a series of 100 cases with chronic prostatitis in which the secretion of the gland was found to be pathological, relief of symptoms and a reduction of the pus cells may be expected in 84 per cent from regional treatment. The cases of sexual dysfunction were unrelieved by local or other treatment procedures.

159 *N. Dearborn Street.*

TRAUMATIC RUPTURE OF THE EXTERNAL ILIAC ARTERY

Case Report with Discussion of Some Useful Procedures in the Management of Vascular Injuries.*

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Our purpose in this report is to emphasize the use of some of the newer adjunctive procedures available for the management of vascular surgery, more particularly when one of the large arteries of the body is ruptured and when every attempt should be made to repair the rupture and to restore the continuity of the arterial stream. The importance of the time element in these cases is obvious and does not require any elaboration. In this case heparin was used postoperatively in order to lessen the amount of clot formation around the sutures at the site of the repair of the rupture. It is well known that sutures used to repair rents, traumatic or operative, in the walls of the blood vessels tend to excite clot formation, and the clot may become large enough to occlude the blood vessel, thereby producing a serious situation when one of the more important vessels of the body is involved. Thrombokinase, which is liberated from injured tissues, is produced from the crushed tissue caused by tying the sutures and this accounts for some of the clot formation at the site of the repair of the blood vessel injury. In fact, we have to make use of the thrombokinase factor of clot formation in order to secure a successful closure of the rupture of the artery. After several fine silk sutures on a delicate needle failed to make the repair of the rupture of the artery complete, a free muscle graft was tied over the whole area of the rupture and the thrombokinase from the crushed muscle tissue caused all oozing of blood from the incomplete repair of the rupture to cease immediately by formation of a clot where the blood was oozing externally. Parenteral fluids, alcohol by mouth, and the alternating negative and positive pressure glass boot (Pavaex) were used during the postoperative course in order to be sure of an adequate circulation of the lower extremity.

*Presented before The Northern Virginia Medical Society, September 9, 1941.

CASE REPORT

A white male, aged 14, was exploding fire crackers in a tin can on July 4, 1941, and a coiled piece of the top of a tin can flew off and struck him in the left lower abdomen. He was seen at the hospital twenty minutes after the accident, at which time he complained of excruciating pain throughout the left leg and thigh. He was in obvious shock with a systolic blood pressure of 70; the pulse was rapid and thready, and he complained of marked thirst. The extremities were cool and the left leg was much cooler than any of the other extremities. No pulsations were palpable in any part of the left leg or thigh, and motion of the leg caused marked pain in the left groin. There was a ragged puncture wound 2 cm. in diameter in the abdominal wall about 5 cm. cephalic to the mid-portion of Poupart's ligament on the left side. Through this small puncture wound a slender piece of intact omentum 10 cm. in length was extruding, and bright red blood was oozing freely around the omentum. Beneath this wound there was a slight bulge of the abdominal wall about 15 cm. in diameter which was markedly tender and spastic to palpation. There was very slight tenderness and no spasm on the right side of abdomen. The remainder of the physical examination was irrelevant. A blood typing was the only immediate laboratory procedure carried out.

Treatment.—Sedation, external heat, Trendelenburg position and parenteral fluids were instituted immediately for treatment of the shock. He was catheterized and clear urine was obtained. While these procedures were carried out the diffuse swelling of the left lower abdominal wall increased markedly and rapidly in size and it was obvious that blood was accumulating in the abdominal wall because there was only a slight oozing of blood from the small external wound. The patient was anesthetized with ether and the abdominal wall scrubbed. A thorough cleansing and irrigation of the small wound in the left lower abdominal wall was done with ether, soap and several liters of physiologic saline. The long thin piece of extruding omentum was pulled outward and severed in an uncontaminated area. Then a thorough debridement of the small abdominal wall wound was carried out and the wound was again irrigated with quantities of physiologic saline. A longitudinal incision was made through the wound and carried down to the peritoneum, during which many fresh blood clots and considerable quantities of bright red blood were encountered. The deep epigastric artery (left) was completely divided at the internal inguinal ring and there was profuse bleeding into the abdominal wall, and also into the peritoneal cavity through a small traumatic rent in the peritoneum. The deep epigastric artery was ligated but fresh blood continued to fill the lower portion of the wound. The incision was carried down to Poupart's ligament and a coiled piece of tin can 2 cm. long was found and removed. Poupart's ligament was divided transversely and a 1½ cm. tear in the anterior wall of the external iliac artery (left) just proximal to the ligament was exposed. This rupture was sutured with fine black silk, but blood continued to leak around the sutures in excessive quantities. A free graft from the rectus abdominis muscle was tied over the sutured rent in the external iliac artery and all bleeding ceased within a few seconds.

Because of the large amount of blood in the peritoneal cavity the incision was extended upward and 600 c.c. of blood were evacuated from the abdominal cavity. Examination of the spleen and intestines revealed no other sources of hæmorrhage. Six grams of sulfanilamide crystals were placed in the peritoneal cavity and the wound was closed in layers with catgut except for a rubber covered gauze drain in the central portion which went down to the peritoneum. Four grams of sulfanilamide crystals were distributed through the wound. During the operation the patient received parenteral fluids and 500 c.c. of blood through a constant venoclysis. The condition of the patient was satisfactory at the end of the operation. The hemoglobin was 60 per cent and the red blood cell count was 3,000,000 after the 500 c.c. blood transfusion. The patient received a prophylactic dose of tetanus antitoxin.

Postoperative Course.—On the first postoperative day the left leg and foot were cold and no pulsations were palpable distal to the proximal portion of the femoral artery. The left leg was placed in a Pavaex boot for 12 hours in order to promote a better circulation through the extremity. Twenty hours after the operation 10 c.c. of heparin* were administered intravenously in a liter of physiologic saline. Two hours following this injection the coagulation time of the blood was over 18 minutes. Twelve hours after the injection of heparin the left leg was much warmer except for the foot and on the third postoperative day a pulsation was palpable in the popliteal artery. The heparin was given in 40 to 50 mgm. doses intravenously in physiologic saline at four to six hour intervals, and the left leg was in a Pavaex boot eight to ten hours a day, from the second to the fifth postoperative day. For peripheral vasodilatation the patient received wine by mouth. On the fifth postoperative day the left foot was warm except for the toes, which remained cold and blanched. The amount of heparin was gradually decreased until it, and the Pavaex boot, were discontinued on the 8th postoperative day. The patient was up in a chair on the 15th postoperative day and was discharged from the hospital on the 18th postoperative day. At the time of his discharge the left foot was still cooler than the right foot, particularly the toes, and no pulsation was palpable in the dorsalis pedis artery on the left foot. He was able to walk a block without pain in his left lower extremity by the 32nd postoperative day, but it was not until the 60th day after injury that the warmth of his left foot equalled that of the right foot and that a good dorsalis pedia pulsation returned.

*Liquaemin, supplied through the courtesy of Roche-Organon, Inc., Nutley, N. J. Each c.c. contains the equivalent of 10 mg. of purified heparin.

DISCUSSION

Every competent and conscientious physician knows that an operation itself is but a small part of the total effort made to effect a cure. There are several adjuncts available for the proper management of vascular surgical procedures and it is some of these measures we wish to discuss. Heparin is the most recent, and probably the most important, addition to the measures which should be used in vascular surgery.

Sutures used to repair rents, operative or traumatic, in blood vessels long have been known to incite clot formation in the lumen of the vessels at the site of the repair. At times the clot may be large enough to occlude the vessel and thereby produce a serious situation when it involves one of the more important arteries. Also, the thrombus may be the site of origin of an embolus which may be dislodged and occlude the main arterial supply to an extremity and give rise to gangrene. Heparin is the first successful remedy which has become available to combat the clot formation at the site of injury and at the site of operative procedures in blood vessels. Murray[1] and his colleagues have shown that thrombus formation in injured blood vessels was usually completely prevented in heparinized dogs. Furthermore, following experimental blood vessel surgery he reported that the vessel was occluded with a thrombus postoperatively in 65 per cent of cases when no heparin was used. This postoperative occlusion of the vessel with a thrombus was only 20 per cent when heparin was used. The enormous clinical value of using heparin in vascular surgery is obvious.

Heparin raises the coagulation time of the blood, but the exact manner in which it prevents the formation of a thrombus is not yet known. Heparin will not dissolve blood clot or a thrombus, either *in vivo* or *in vitro*.[2]

Heparin has been used in large series of cases to prevent postoperative thrombophlebitis. Murray[1] reports that heparin was used after operative procedures in 440 patients and that there were no instances of thrombophlebitis or pulmonary embolism. Crafoord and Jorpes,[3] of Stockholm, Sweden, used heparin in prophylactic doses following general surgical procedures during a period of three years. In 325 cases they observed no cases of thrombophlebitis or pulmonary embolism. However, in a control series of 1,111 cases which received no heparin these complications occurred in 9 per cent of the cases. To prevent splenic vein and systolic thrombosis following splenectomy and to prevent local thrombosis after operation for mesenteric thrombosis and after embolectomy, heparin has been used with promising results.[1,7] There are sound theoretical reasons to support the use of heparin in these cases. Lehman and Boys[4] are carrying out experiments to test the value of heparin in the prevention of intro-abdominal adhesions. Heparin is also used in the treatment of established thrombosis because the further growth and extension of a thrombus is inhibited by the anti-coagulant effect of the heparin. Then the previously formed thrombus will be taken care of by the normal process of healing, absorption, organization and, perhaps, canalization. Murray[1] treated 81 cases of thrombophlebitis with heparin without any subsequent clinical evidence of pulmonary embolism. Holman and Ploman[5] and others have used heparin to treat thrombosis of the central vein of the retina and there was a more rapid recovery than usual. Its use in the treatment of mesenteric, coronary and cerebral thrombosis is promising, but so far not enough conclusive studies have been published to establish its value in these cases.

Some writers have intimated that heparin will dissolve a previously formed thrombus. There is no experimental evidence to back up this assumption.[2] A more plausible explanation would seem to be that heparin in sufficient amounts undoubtedly prevents the extension of a thrombus, and then the healing of the non-propagating previously formed thrombus will be completed more quickly. It is obvious that a thrombus restrained by heparin will be organized in a shorter time than a propagating thrombus. Therefore, a more rapid clinical recovery of an established thrombus treated with heparin does not necessarily indicate that heparin caused any dissolution of the thrombus. This explains the good results of heparinization in patients with postoperative pulmonary embolism because the heparin is a prophylaxis against further propagation of the thrombosis which gave rise to the pulmonary embolus. One of us (L.M.B) has successfully used heparin in a case of pulmonary embolism following a hernia repair in an elderly patient.

In our case it is felt that the use of heparin prevented the formation of a thrombus large enough to occlude the external iliac artery at the site of the

repair of the rupture. The heparin was given in multiple intravenous injections of physiologic saline. It can be administered in a continuous venoclysis or by the subcutaneous and intramuscular routes. In the two latter routes the maximum anticoagulant action of the heparin will not appear for 2 to 4 hours, whereas a full anti-coagulant effect is obtained immediately after intravenous injection of the heparin. McClure and Lam[6] gave undiluted heparin in small amounts intravenously at frequent intervals in one of their cases. Murray and Best[2] advise not using heparin for from 4 to 24 hours following operations so that there will be less chance of bleeding and hematoma formation. The recent report[8] of massive hematuria, which required a blood transfusion for treatment, in a patient who was given 20 mg. of heparin beginning four hours after operation illustrates the need for frequent clinical and laboratory examinations of any patient receiving heparin. The heparin must be administered in amounts and by the suitable routes frequently enough to keep the coagulation time of the blood at about the arbitrary value of 15 minutes. Since there is a considerable variation in the amount of heparin necessary to elevate the coagulation time of the blood to any level in different patients,[6] one has to use heparin in amounts and by the route or combination of routes to fit the individual case. Frequent determinations of the coagulation time of the blood are necessary in order to manage properly the heparinization of a patient.

The other significant point of interest in the management of this case was the use of a free muscle graft in order to effectively close the wound in the external iliac artery. After the rent in the artry was closed with fine silk sutures considerable oozing of blood around the sutures continued. A small free muscle graft was tied over the wound in the artery and the oozing of blood ceased at once. Muscle grafts are not infrequently of great value to a surgeon in the control of hæmorrhage. Clute[9] has given a good review of this subject and a summary of his experiences with the use of muscle grafts for hemostasis. He cites a case, very similar to ours, where the inferior vena cava was torn during an operation. Fine silk sutures failed to control the oozing from the vena cava, but a piece of muscle tissue tied over the sutures effectively controlled the bleeding. When muscle, or any tissue, is crushed, thrombokinase is liberated and this sets into motion the clotting process of the blood—Nature's spontaneous method of stopping hæmorrhage in any minor injury or cut.

Our methods in the treatment of this injury were no paradox and we were not "toying" with the clotting mechanism of the blood. However, we first used a crushed piece of muscle to cause clot formation in order to control the oozing at the site of the repair of the torn external iliac artery. Then, a few hours later, heparin was administered so that excess clot formation would not take place in the lumen of the artery at the site of the repair. The production of these diametrically opposite stages of the clotting process of the blood at different times proved successful in the management of this case.

Wine by mouth and the alternating negative and positive pressure glass boot were used postoperatively in order to promote a better peripheral circulation.

SUMMARY

1. The report of a case of traumatic rupture of the external iliac artery is presented.

2. Some of the adjunctive procedures available for the management of vascular surgery are discussed.

3. A free muscle graft was used to control the oozing of blood from the artery.

4. Heparin was administered to prevent excess clot formation in the lumen of the artery, and possible occlusion of the artery, at the site of the repair of the rupture.

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LEIOMYOMA OF THE STOMACH—A CASE REPORT*

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Richmond, Virginia.

Smooth muscle tumors of the stomach are not rare, (Chaffin[1], Rigler and Ericksen[2]) but as they seldom produce symptoms the pathologist usually discovers these tumors as incidental autopsy findings. Occasionally the tumor by growth causes obstruction at the pylorus or ulcerates and the subsequent hemorrhage is revealed by hematemesis or tarry stools. Malignant degeneration in gastric leiomyomata has often been described, (Collins and Collins[3], Lahey and Colcock[4], Horsley and Berger[5]) so it would seem important to emphasize the early recognition of these tumors. This is a report of a benign lesion that has been apparently cured by operation.

History.—A white male, aged sixty-eight, was admitted to the hospital in April, 1940, complaining of weakness and tarry stools. The patient had been known to have high blood pressure for the past five years, and during this time also suffered from frequent attacks of right upper quadrant pain, not associated with vomiting or fever. In January, 1936, he was hospitalized for one of these attacks of upper right abdominal pain and at that time an intravenous cholecystogram revealed a nonfunctioning gallbladder without calculi. In May, 1936, the patient developed painless hematuria and was found to have a papillary squamous cell epithelioma, Grade I, of the urinary bladder. This tumor was removed by trans-urethral resection. The patient made an uneventful recovery and has never had any recurrence of urinary symptoms. In the latter part of March, 1940, the patient had two fainting spells and both episodes were associated with tarry stools. He had noticed a dark color to his stools for several weeks and had vomited on several occasions, expectorating a small quantity of blood.

Examination.—The patient was a small, anemic, and dehydrated, male; his temperature was 98.6°F., his pulse rate 50, and his respiration 18. His blood pressure was 170/100. The eye grounds showed moderate arteriosclerosis. The neck veins were not distended and no lymph nodes were palpated in the neck. The chest and lungs were normal. There were no murmurs over the heart and it was not enlarged. The abdomen was not tender and no definite masses were palpated. The rectal examination revealed a very dark stool without gross blood; the prostate was normal in size; no other masses were found.

Admission Laboratory Data.—The urine contained a trace of albumin; its specific gravity was 1.022; it was sugar-free; there was an occasional cast per high power field. The erythrocyte count was 3,710,000; the hemoglobin, 62 per cent (Sahli); the leukocyte count, 9,300; the differential count showed 62 per cent polymorphonuclear neutrophils, 28 per cent lymphocytes, 2 per cent monocytes, and 2 per cent eosinophils. The blood Wassermann and Kline reactions were negative. The nonprotein nitrogen content of the blood was 38 mg. per 100 c.c. The electrocardiogram showed left axis deviation with no other abnormalities.

Course in the Hospital.—A proctoscopic examination did not reveal any bleeding points and a normal mucosa for twelve inches. A gastrointestinal X-ray series stated that there was no pathologic change in the esophagus. A tiny portion of the cardiac end of the stomach protruded upward to the esophageal orifice of the diaphragm. The stomach was hypertonic in type with two-cycle peristalsis. There was a filling defect of the cardiac portion of the stomach, extending down along the lesser curvature for about 5 cms.; it was 1.5 cms. in width. The duodenum and upper jejunum filled well and there was no delay in the emptying of the stomach. There were no palpable masses or points of tenderness. At six

*Presented before the Richmond Academy of Medicine, April 14, 1942.
From the Departments of Medicine and Surgery, Medical College of Virginia.

hours there was no retention in the stomach and at twenty-four hours the barium extended through the colon. Figure 1-A shows the X-ray lesion before operation and Figure 1-B the stomach eleven months following operation.

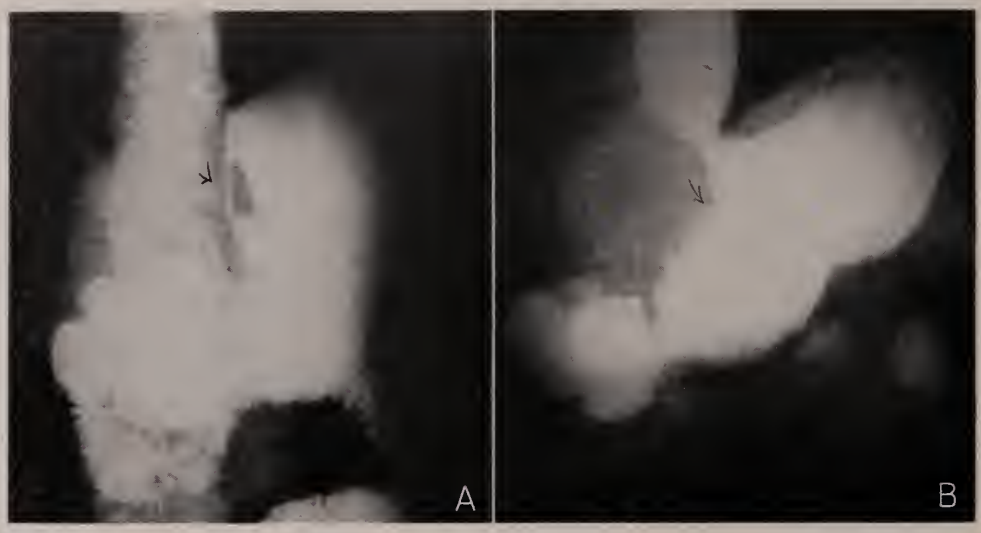

Fig. 1.—A. Roentgenogram showing filling defect of the cardiac portion of the stomach. B. Roentgenogram showing the stomach eleven months following operation. A slight constriction is seen, associated with the operative interference.

At operation the liver was normal; the gall-bladder was considerably thickened and contained a number of stones. The stomach and duodenum appeared normal but in the upper portion of the stomach near the esophageal opening, there was a hard round tumor which measured about 8 cms. in length and 4 cms. in diameter. After opening the stomach the exposed tumor was covered with smooth mucous membrane and attached by a pedicle

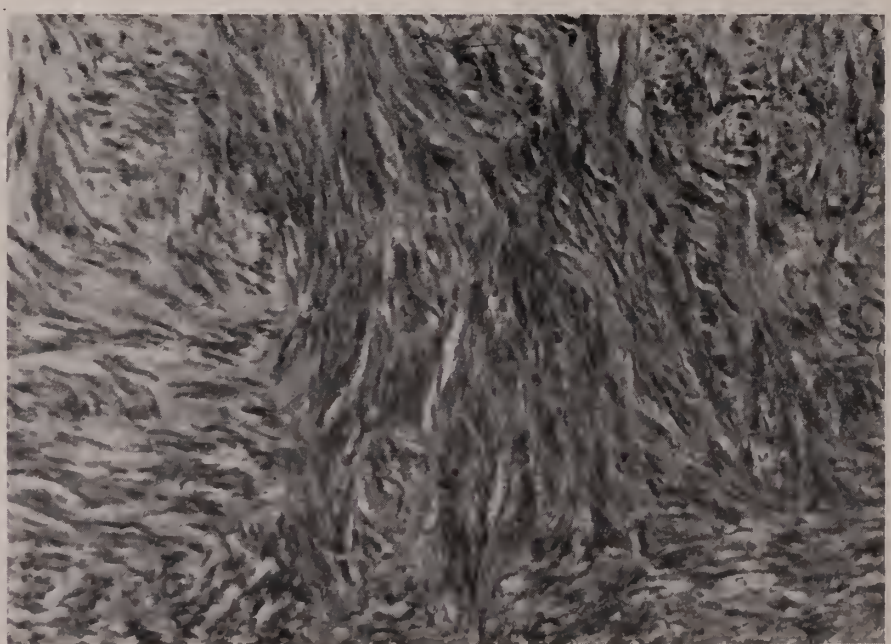

Fig. 2.—Photomicrograph of leiomyoma of the stomach showing interlacing bundles composed of connective tissue and smooth muscle. The smooth muscle cells have elongated nuclei. (x 240.)

extending throughout its length. This pedicle was clamped and the tumor removed by dividing the pedicle over the clamp.

Pathological Report: The specimen consisted of an oval nodular tumor measuring 5 x 3.5 x 3 cms. The surface was covered by thinned out mucous membrane and areas of denuded gray lobulated tissue. Gross section revealed interlacing bundles and whorl-like patterns of gray connective tissue. There was a small cyst-like cavity in the center of the mass. The microscopic description stated that beneath the mucosa there was a cellular structure sharply circumscribed and composed of interlacing bundles, the cells having elongated nuclei and appearing to be connective tissue and smooth muscle. Hyaline degenerative changes were found and there was a moderate round cell infiltration of surrounding connective tissue. The pathological diagnosis was benign leiomyoma of stomach wall.

The patient reacted very favorably from the operation, and had an uneventful convalescence, being finally discharged twenty days following admission.

A gastrointestinal X-ray series was performed eleven months following operation. It revealed that the stomach was small and hypertonic. It filled well in the region of the cardia and fundus and there was no longer a filling defect in the lower cardiac portion as on previous examinations. There was a slight constriction along the lesser curvature, about one inch from the esophageal orifice, apparently associated with the operative interference.

The patient was seen several weeks ago and has had no gastrointestinal symptoms since operation.

COMMENT

This is certainly not a rare case, because most observers admit that leiomyomata of the stomach are the most frequent gastric tumors, but fortunately these tumors have no effect on the human mechanism unless they undergo malignant degeneration, cause obstruction, or hemorrhage. In this particular case, the tumor would not have been discovered unless the patient had developed gastric hemorrhage.

This is the only case of leiomyoma of the stomach undergoing operation that has been found in the Medical College of Virginia Hospitals during the past fifteen years. During this period of time several leiomyosarcomata have occurred and these could have originated from benign tumors. Although we could assume this on a theoretical basis, no definite proof may be offered, so this case is unique in that it is the first leiomyoma of the stomach in our records.

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THE LESS DISCUSSED USES OF THE SULFONAMIDES*

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It would be almost impossible to discuss all of the uses of the sulfonamides, for the scope of their uses are wide and varied. We all know of the phenomenal results we get with these drugs in pneumonia, meningitis, G. C. infections and others, but I would like to review here a few of the less discussed conditions in which they are very good.

I have observed and reported several cases of rheumatic infections cured, and without a recurrence over a period of two or three years, from the use of sulfanilamide. Sulfathiazole has not given me any improvement in these cases, but when I changed to sulfanilamide they started to improve at once. My results have been much better than those reported by anyone else, and I believe it was due to starting the drug in the first few days of the infection. Dr. Paul Dudley White, of Boston, suggested that there may have been some latent or hidden streptococcus infection and that the control of this may have shortened the attack of rheumatic fever. We all know

*Read before the Tazewell County Medical Society, May 14, 1942.

that the streptococcus seems to precipitate an attack of rheumatic infection, and, if for no other reason, I think sulfanilamide is indicated early in the disease. Thomson and Innes, of Edinburg, Scotland, have lately found hemolytic streptococci on the damaged valves in five of ten fatal acute cases. Their conclusion was that, although at the present time the etiology of rheumatic fever cannot be said to have been solved, they are inclined to support the view that the cardiac lesions are, in fact, due to infection with hemolytic streptococci. Thomas, of Johns Hopkins, and others have rather definitely proven that if sulfanilamide is taken continuously throughout the cold months it will prevent recurrences. I believe about the same prevention can be obtained by giving sulfanilamide with every upper respiratory infection regardless of when it occurs.

Sulfaguanidine in the treatment of typhoid fever has not received much comment, but there have been some good reports of its use in this infection, and my limited trial of it in two cases was outstanding. I had one child and one adult that had definite typhoid infection with cultures and Widal both proving the diagnosis. Within two weeks after starting the sulfaguanidine both cases were up going around and normal in every way. Their temperatures and other signs of the infection had cleared up by the end of the first week. The second week of care was just a safety measure.

Sulfaguanidine is also good in almost all of the infectious summer diarrheas, and should be used in all diarrheas, for in many cases it helps when we cannot prove it to be a true infection.

Lyon and others, of Huntington, West Virginia, gave an excellent review of the treatment with sulfaguanidine of 259 patients who had "bloody flux." They proved that this drug is a quick and effective treatment in this bacillary dysentery, and just as safe as it is effective.

I have found also that many of these cases that do not readily respond to sulfaguanidine will sometimes show a remarkable change when changed to sulfathiazole. This is quite true when the diarrhea is secondary to an ear or kidney infection. Taylor, of Duke, believes sulfathiazole to be just as good or better than sulfaguanidine in intestinal infections. The sulfonamides are remarkable in burns. Back in 1940 Grisby reported in the VIRGINIA MEDICAL MONTHLY good results with sulfanilamide in two severely burned cases. Many others claim sulfathiazole is even better and Johns Hopkins Hospital uses sulfadiazine (3 per cent) and one of the dyes (8 per cent triethanolamine) in solutions as a spray routinely and have reported excellent results.

"The burned area are sprayed every hour during the first day, every two hours the second day, every three hours the third day, and every four hours the fourth day. By this time a thin translucent eschar has formed, and further spraying is not essential."

Lymphogranuloma can be cured with the sulfonamides but it is best to continue the treatment until the Frei test is negative, which sometimes is several days after the lesion has disappeared.

Beinhauer and Knoll and others have reported sulfathiazole "to be an efficacious mode of therapy in the treatment of acute infectious eczematoid dermatitis, furunculosis, impetigo contagiosa, pyogenic lymphangitis, blepharitis marginalis and erythema multiforme and to be beneficial in sycosis vulgaris." Special attention is called to response of the pustular type of acne vulgaris.

These are a few of the many uses of the sulfonamides, but this is only the beginning; and what we accomplish hereafter may be astonishing.

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THE IMPORTANCE OF PHYSICAL EXAMINATION IN THE DIAGNOSIS OF PRIMARY BRONCHIAL CARCINOMA

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The rapid increase in the incidence of primary carcinoma of the tracheobronchial tree has resulted in many discussions as to etiology, diagnosis, and treatment of the disease. Except in rare instances, the importance of physical examination in differentiating primary bronchial malignancy from subacute or chronic inflammatory pulmonary lesions is not emphasized sufficiently, and many authors state that there are no significant physical signs which are helpful in distinguishing carcinoma of a bronchus from other pulmonary diseases.

As a matter of fact, one of the characteristic features of primary bronchial carcinoma is that on stethoscopic examination diminution of breath sounds is marked, with little or no alteration in percussion note, over the area of the lung supplied by the involved bronchus. These findings are of such significance that, when present, tissue for microscopic study should be removed from the wall of the bronchus suspected of harboring a malignant lesion, even when the gross appearance of the bronchus at bronchoscopic examination does not suggest carcinoma. In confirmation of the statement that suppression of breath sounds without impairment of percussion note is important in diagnosis of primary bronchial carcinoma I quote from Strümpell's 1914 edition of Text-Book of Medicine,* originally published in 1886, when primary malignant disease of the bronchus was rarely encountered:

"Physical examination frequently gives no positive results at the outset. In the cases observed by the author, a striking diminution of the respiratory murmur over localized areas, despite normal pulmonary resonance, was often the first decided change in the physical signs. It was due to the increased obstruction of the afferent bronchus by the growing tumor."

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MENTAL HYGIENE ACTIVITIES

Echoes from the State Medical Meeting.

At the annual meeting of the Medical Society of Virginia, held at Roanoke, Virginia, on October 5-6-7, two papers of psychiatric interest were presented. Dr. David C. Wilson emphasized the importance of shock therapy in the "Treatment of Mental Diseases of the Involutional Period". Mental depression with agitation was the symptom index in the selection of patients for treatment, the age and other factors being more or less disregarded. His results were convincing in that symptomatic improvement occurred in over 60 per cent of the cases treated. Another important factor he stressed was the reduction in the period of hospitalization. Even if there are relapses, treatment can be repeated and relief obtained from distressing symptoms at economy in time and expense to the patient.

Dr. Beverley R. Tucker discussed this paper, and his results in a small and more confined group were about the same.

Dr. R. Finley Gayle's paper dealt with "The Care of the Mentally Sick in a General Hospital". In his presentation, Dr. Gayle mentioned how the attitude of the laity and of the profession, in many instances, had worked against the care of mentally ill, particularly in a general hospital. With a better understanding of the purpose of a psychiatric ward and a trained personnel in a general hospital, many of the acute mental disorders can be and are adequately treated. The advantage of concentrated work and accessible consultation are obvious. Dr. Asa Shield, in his discussion, concurred with Dr. Gayle and reported that in a recent survey in a gen-

eral hospital one patient out of every five presented definite psychiatric problems. Dr. Tucker also discussed this paper and pointed out the frequency of mild mental disturbance being aggravated by the injudicious use of sedatives. Bromide intoxication has been a persistent and frequent finding, due no doubt to the frequency with which this drug is prescribed and the proneness of the patient to have the prescription refilled. Drug addiction, toxic psychosis and cases in which shock therapy is indicated are particularly amenable to treatment in a general hospital where a well organized psychiatric department has been established. Such facilities are now present at the Medical College Hospital in Richmond and at the University Hospital in Charlottesville. It is hoped that other general hospitals in the State will follow their lead and make some provision for at least the emergency care of the mentally ill.

There were no other papers on the program of a strictly psychiatric nature but several of the essayists and discussants mentioned the emotional factors in hypertention, and the sociological as well as the emotional factors in alcoholism.

The Mental Hygiene Society of Virginia has instituted a program of consistent planning which includes better care and treatment facilities in our State hospitals and feeble-minded colonies, a more adequate psychiatric teaching and training program in our medical and nursing schools, rationalizing and humanizing the public attitude towards mental hygiene, and promoting a program of prevention which would be State-wide in scope, directed especially to the children in our public schools and the hundreds of adults who are to a degree mentally or emotionally disturbed but should not be placed in a mental institution.

This is mentioned because at our State medical meeting there was no presentation that identified itself strictly with the mental hygiene movement. This should not be so because the active interest of the profession is absolutely necessary if the cause of mental health is to grow and become part of the overall effort to make man a healthier and happier individual. Then, too, the interest of the profession should be constantly stimulated because they in turn can do much to stimulate a more genuine appreciation and greater support from non-professional individuals and groups in mental health matters.

REX BLANKINSHIP, M.D.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was a 34-year-old white woman who had had thirteen children before the present pregnancy. She was seen by a physician during the present pregnancy for the first time two days before delivery because of mild uterine contractions. She was seen again two days later, having delivered just prior to the arrival of the physician. At that time she was complaining of pain in the abdomen, and there was slight abdominal distention. The following day the patient was complaining of abdominal pain and had more marked abdominal distention. Temperature 99, and pulse rapid. She was sent to a hospital.

On admission the patient was complaining of abdominal pain and vomiting greenish fluid. The abdomen was moderately distended, BP 100/80, and pulse 160. She was given pituitrin, morphia, an enema, 1000 cc. of 5 per cent glucose intravenously, and Wangenstein suction started. The patient got progressively worse and died within twenty-four hours after admission. Autopsy was refused and the attending physician stated that he could not be certain as to the cause of death.

DISCUSSION

This was classified by the committee as a non-preventable obstetrical death. It is true that the patient had no prenatal care, but the committee felt that prenatal care would not have prevented this fatal accident of labor. An early immediate diagnosis just after labor and prompt immediate treatment may have altered the outcome, but the condition hardly seemed definite enough to the attending physician at the time to warrant its classification as a preventable death.

While of course the cause of death was not proven it is reasonable to assume that a rupture of the uterus had occurred. Severe abdominal pain immediately after delivery, followed by distention, vomit-

ing, rapid pulse and later shock is the characteristic picture of uterine rupture. Spontaneous rupture of the uterus occurs not infrequently in individuals who have had a large number of children. This patient had had thirteen previous pregnancies. The frequency of spontaneous uterine rupture is one of the hazards which face the socalled "grande" or "multi" multipara. The death rate rises progressively after the fifth or sixth pregnancy, so that the hazard with later pregnancies is greater than with the first pregnancy. It is this increased risk which accompanies the later pregnancies that has induced some clinics to offer either contraceptive advice or operative sterilization to individuals who have had five or more living children.

In the case under consideration if the diagnosis could have been made at the time of the visit just after delivery, and if the patient had been immediately referred to a hospital, it is possible that transfusions and immediate hysterectomy may have changed the outcome, although the mortality even under these circumstances is quite high. In view of these facts the committee felt that this should be classified as a non-preventable obstetric death. It is felt that this type of case forms a part of the irreducible minimal mortality which will always occur in association with pregnancy, parturition or the puerperium.

Correspondence

Diadermic Drinking of Water.

OCTOBER 14, 1942.

TO THE EDITOR:

In the September, 1942, issue of the VIRGINIA MEDICAL MONTHLY is an article entitled "Diadermic Drinking of Water" by L. I. Hallay. Because there are a number of statements of debatable merit in this article and because in our opinion Doctor Hallay has jumped to conclusions from inadequate evidence, we are moved to put some of our objections in print, since this question is of such extreme importance at the present time.

Doctor Hallay states that ". . . sea water is a 2.7 per cent solution of NaCl . . ." The statement should be that sea water has an osmotic pressure approximately equivalent to a 2.7 per cent of a solution of sodium chloride. In opposition to one of Doctor Hallay's statements, rectal administration of sea water has been tested recently and the effects were shown to be deleterious, as would be expected.

The statement is made ". . . psychotic patients do not usually become hydremic when kept 8-16 hours in a continuous bath." One would not expect them to become hydremic so long as their kidneys were functioning, assuming that fresh water was actually being absorbed through the skin.

Doctor Hallay writes that ". . . the skin of . . . lower vertebrates such as fish . . . is said to be able to absorb water and electrolytes." Our usual explanation of the mechanism of water and ion exchange in fishes is that this exchange occurs through the gill membranes and not through the skin.

Doctor Hallay states "Neither can osmosis alone explain the fact that the juices of the plankton . . . are relatively fresh water. These microscopic sea animals are continuously surrounded by hypertonic sea water; nevertheless, they do not seem to die on dehydration or salt poisoning." We can find no reference to the osmotic pressure of plankton, but the larger invertebrates such as jelly fish, star fish, etc., all have an osmotic pressure approximately identical with that of the surrounding water. Moreover, fresh water amebae which have a definite osmotic pressure do not die of water poisoning in their natural habitat, since they have mechanisms such as the contractile vacuole to regulate their osmotic concentration. We can only assume that if plankton are hypotonic to sea water, which would seem doubtful offhand, they undoubtedly have mechanisms for maintaining this condition. Whale's blood is of the same concentration as the human blood, i.e., definitely hypotonic to sea water, yet they do not die of "dehydration or salt poisoning".

Dr. Hallay states that a sailor remained in sea water all night without apparent dehydration, whereas osmosis would have caused dehydration in considerably less time than this. Again, we wish to point out that whales and the higher teleosts whose blood is hypotonic to the sea water do not suffer dehydration on spending one night or several in it. From the fact that this sailor spent a night in the water Doctor Hallay reaches the conclusion that the skin of a thirsty person when immersed in sea water would immediately absorb the water and for some time be able to discard the sodium chloride dissolved in it. We are unable to follow such lightning mental saltations. From the above fact we

would merely draw the conclusion that no noticeable dehydration was effected by sea water through the intact skin in this individual.

We believe that the author has missed completely an important physiologic phenomenon, in that a subject exposed to the sun in a life boat without shade in hot weather will lose considerable water by perspiration and respiration. Frequent or constant immersion of the body in cool sea water would enable him to regulate his body temperature without the necessity for sweating.

Another possibly important aspect of survival on limited water intake would be the fact that proteins, fats, and carbohydrates give rise to different amounts of metabolic water per calory obtained. Moreover, whereas protein requires water excretion to expel its waste product urea, the end products of fats and carbohydrates are H_2O and CO_2. Hence for short periods at least, low protein diets might be preferable.

We believe that the effects of immersion of the body in sea water should be thoroughly studied in order to determine whether any appreciable dehydration can be produced osmotically; or if Doctor Hallay is correct, whether the body can selectively absorb water while rejecting the dissolved salts, of which there are many besides sodium chloride. Until more definite information is available it is probably best not to make any recommendations on so important a subject, arrived at by mere conjecture.

We hope that the Navy is doing research on this important project.

Very respectfully yours,

H. B. HAAG,
R. J. MAIN.

Department of Physiology and Pharmacology,
Medical College of Virginia, Richmond.

Correction for Article in September Monthly.

BOSTON, MASSACHUSETTS,
SEPTEMBER 28, 1942.

TO THE EDITOR:

It has just come to my attention that a serious error occurred in my paper entitled "Vitamins, Recognition of Avitaminosis . . . etc." and published in the September issue of the VIRGINIA MEDICAL MONTHLY. On page 492, line 7 the figures should read 2-5 mgs., not 100 mgs. The entire sentence should read as follows: "The requirement of riboflavin for both children and adults approximates 2-5 mg. (0.1 gm. per 100 calories of food)."

Would it be possible to have this correction noted in the next issue of the MONTHLY? As you can see, it is a rather serious error, and I am sorry that this occurred.

BENJAMIN F. SIEVE, M.D.

Military Medicine

Policies Governing Initial Appointment of Physicians as Medical Officers.*

The Surgeon General of the Army published detailed information concerning policies governing the initial appointment of physicians as medical officers on April 23, 1942. Necessary changes are given wide publicity, at his request, in order that the individual applicants, and all concerned in the procurement of medical officers, may know the status of such appointments.

The current military program provides for a definite number of position vacancies in the different grades. The number of such positions must necessarily determine the promotion of officers already on duty and, in addition, the appointment of new officers from civilian life. Such appointments are limited to qualified physicians required to fill the position vacancies for which no equally well qualified medical officers are available. Such positions calling for an increase in grade should be filled by promotion of those already in the service, insofar as possible, and not by new appointments.

If this policy is not followed, it would definitely penalize a large number of well qualified Lieutenants and Captains already on duty by blocking their promotions which have been earned by hard work. In view of these facts, it has been deemed necessary to raise the standards of training and experience for appointment in grades above that of First Lieutenant.

With this in view, The Surgeon General has announced the following policy which will govern action to be taken on all applications after September 15, 1942:

*Sent for publication by Dr. Hugh H. Trout of Roanoke, chairman of Procurement and Assignment Service for Virginia, upon request from the Manpower Commission, Washington, D. C.

All appointments will be recommended in the grade of First Lieutenant with the following exceptions:

CAPTAIN. 1. Eligible applicants between the ages of 37 and 45 will be considered for appointment in the grade of Captain by reason of their age and general unclassified medical training and experience.

2. Below the age of 37 and *above* the age of 32, *consideration* for appointment in the grade of Captain will be given to applicants who meet all of the following minimum requirements:

a. Graduation from an approved Medical school.

b. Internship of not less than one year, preferably of the rotating type.

c. Special training consisting of 3 years' residency in a recognized specialty.

d. An additional period of not less than 2 years of study and/or practice limited to the specialty.

3. Eligible applicants who previously held commissions in the grade of Captain in the Medical Corps (Regular Army, National Guard of the United States, or Officers Reserve Corps) *may be considered* for appointment in that grade provided they have not passed the age of 45 years.

MAJOR. 1. Eligible applicants between the ages of 37 and 55 *may be considered* for appointment under the following conditions:

a. Graduation from an approved school.

b. Internship of not less than one year, preferably of the rotating type.

c. Special training consisting of 3 years' residency in a recognized specialty.

d. An additional period of not less than 7 years of study and/or practice limited to the specialty.

e. The existence of appropriate position vacancies.

f. Additional training of a special nature of value to the military service, in lieu of the above.

2. Applicants previously commissioned as Majors in the Medical Corps (Regular Army, National Guard of the United States, or Officers Reserve Corps) whose training and experience qualify them for appropriate assignments may be *considered* for appointment in the grade of Major provided they have not passed the age of 55.

LIEUTENANT COLONEL AND COLONEL. In view of the small number of assignment vacancies for individuals of such grade, and the large number of Reserve Officers of these grades who are being called to duty, such appointments will be limited. Wherever possible, promotion of qualified officers on duty will be utilized to fill the position vacancies.

Much misunderstanding has arisen concerning recognition by Specialty Boards and membership in specialty groups. It will be noted that mention is not made of these in the preceding paragraphs. This is due to the variation in requirements of the different Boards and organizations. Membership and recognition are definite factors in determining the professional background of the individual, but are *not* the deciding factors, as so many physicians have been led to believe.

The action of the Grading Board, established by The Surgeon General in his office, is final in tendering initial appointments. Proper consideration must be given such factors as age, position vacancies, the functions of command, and original assignments. All questionable initial grades are decided by this Board. Due to the lack of time, no reconsideration can be given.

There are in the age group 24-45 more than a sufficient number of eligible, qualified physicians to meet the Medical Department requirements. It is upon this age group that the Congress has imposed a definite obligation of military service through the medium of the Selective Service Act. The physicians in this group are ones needed *now* for active duty. The requirements are immediate and imperative. Applicants beyond 45 years may be considered for appointment only if they possess special qualifications for assignment to position appropriate to the grade of MAJOR or above.

Civilian Defense—Emergency Base Hospitals

The Medical Division of the U. S. Office of Civilian Defense, through its Regional Medical Officers and State Chiefs of Emergency Medical Service, has now made emergency provision for the establishment of a chain of Emergency Base Hospitals in the interior of all the coastal States. They will be activated only in the event of an enemy attack upon our coast which necessitates the evacuation of coastal hospitals. Each base hospital will be related to the casualty receiving hospital which has been evacuated and it is expected that the staff will be recruited largely from the parent institution.

In order to meet a sudden and unexpected crisis without delay, arrangements have been completed with State authorities for the prompt taking over of appropriate institutions in the interior of the State for this purpose and with local military establishments for the transportation of casualties and other

hospitalized persons along appropriate lines of evacuation.

More than 150 hospitals in the coastal cities are in the process of organizing small affiliated units of physicians and surgeons, which will be prepared to staff the Emergency Base Hospitals if they should be needed. These units are composed of the older members of the staff and those with physical disabilities which render them ineligible for military service, and of women physicians. In order that a balanced professional team may be immediately available the doctors comprising units are being commissioned in the inactive Reserve of the U. S. Public Health Service so that, if called to duty, they may receive the rank, pay and allowances equivalent to that of an officer in the armed forces.

D. George Baehr, Chief Medical Officer of the U. S. Office of Civilian Defense, states that the members of these affiliated hospital units will continue to remain on an inactive status for the duration of the war, unless a serious enemy attack occurs in their Region which necessitates the transfer of casualties to protected sites in the interior. Their commissions may be terminated upon their request six months after the end of the war, or sooner if approved by the Surgeon General. Such approval will be given in the event such officer desires active duty in the Army or Navy.

Public Health Statistics

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for September, 1942, compared with the same month in 1941, and for the period of January through September, 1942, compared with the same period in 1941 follows:

	Sept. 1942	Sept. 1941	Jan.-Sept. 1942	Jan.-Sept. 1941
Typhoid and Paratyphoid Fever	33	49	185	181
Diarrhea and Dysentery	555	992	3,944	4,133
Measles	17	105	4,803	34,621
Scarlet Fever	93	55	872	1,016
Diphtheria	61	50	332	311
Poliomyelitis	14	34	34	84
Meningitis	7	9	130	89
Undulant Fever	4	1	26	9
Rocky Mountain Spotted Fever	4	7	42	31
Tularemia	0	1	32	22

RHEUMATIC FEVER IN VIRGINIA

Rheumatic fever is today one of the foremost health problems of childhood. Between the ages of five and nine, deaths from it are outnumbered only by those from the four principal communicable diseases. Between the ages of ten and fourteen, it is the leading cause of death, and between fifteen and twenty-five, it ranks second only to tuberculosis.

The rheumatic fever program of the Crippled Children's Bureau, State Health Department, has been in operation over two years. It has expanded to service five counties: Sussex, Southampton, Dinwiddie, Hanover and Chesterfield, in addition to the City of Richmond and Henrico County.

Interesting figures are being collected concerning this disease in the State. A total of 254 cases have been seen in the clinic, and 97 (34.2 per cent) of these have been definitely diagnosed as rheumatic fever or rheumatic heart disease, meaning that their histories or physical findings were strongly indicative of rheumatic fever and that they should remain under close supervision.

A survey conducted of 979 school age children revealed findings indicating possible organic heart disease in 2.3 per cent of 466 white children and in 8.5 per cent of 513 colored children.

Private physicians have shown an increasing interest in this program and are cooperating by reporting their private cases for a rheumatic fever register as well as referring to the clinic cases on whom they desire consultations.

It is becoming clear that rheumatic fever is practically as common in Virginia as in some of the northern and middle states, but that its manifestations and characteristics are somewhat altered. Climate probably plays some part in this, but other factors, such as race, diet and urbanization also may be involved. Heart damage, however, is just as prone to occur in these so-called mild cases as in the severe ones. This places a double responsibility on the physician—that of accurate diagnosis in borderline cases as well as good medical care after diagnosis.

Hedley (Public Health Reports 1939) states that in Virginia between 1922-36, the mean mortality rate from heart disease between five and twenty-four years of age was 11.2 per 100,000, while the mean mortality rate for colored alone was 20.7 per 100,000. With the present improved standards of

diagnosis, he believes this number would be increased.

Wood et al (University of Virginia) some years ago found that of 300 cases of organic heart disease seen by them in Virginia, 22 per cent were rheumatic heart disease.

Of 22,968 patients admitted to the Medical College of Virginia Hospital Division in 1940-41, 193 (.83 per cent) were definitely diagnosed as having rheumatic fever or rheumatic heart disease.

Through the rheumatic fever program, the State Health Department is helping to provide diagnostic and treatment facilities for suspected cases of rheumatic fever and heart disease. Clinic service is available for anyone up to twenty-one years of age, residing in the State. Hospital and convalescent home services are available to children under sixteen years of age, residing in the City of Richmond and the six counties listed, providing a definite diagnosis of rheumatic fever has been made in the rheumatic fever clinic and that the patient has a reasonably good prognosis as to eventual rehabilitation. Because of limited funds and beds, preference is given those children who are suffering their initial attack and those who have minimal heart involvement. For the same reason, the children must have normal intelligence and assurance must be given that they will receive good follow-up care either in the clinic or by the referring physician.

Miscellaneous

Agar and the War.

The war has cut off importations of agar-agar, which normally come from Japan. The War Production Board has frozen all stocks of agar in order to protect the requirements for bacteriologic culture medium use of the Army, Navy and civilian hospitals and laboratories.

This W.P.B. control of agar stocks made it necessary for Mead Johnson & Company to discontinue the manufacture of "Pectin-Agar in Dextri-Maltose," a product which has been used by the medical profession for the treatment of diarrhea in infants. Fortunately, this company has another product, Casec, which gives good results for the some purpose. Physicians who are not familiar with Casec are invited to write for samples and descriptive literature to Mead Johnson & Company, Evansville, Indiana.

Squibb Uses "Wartime Conservation Containers".

To save several million pounds a year of war-needed metals, E. R. Squibb and Sons, are now redressing their entire line of dry packs in cardboard packages. These products are being put on the market as fast as the laboratories can turn them out. Across the top of each package is a sealing band which reads: "Wartime Conservation Container—The Priceless Ingredient of Every Product Is the Honor and Integrity of Its Maker."

In appearance, the new containers are almost identical with the former metal ones—same colors, same label, same design. They are made of especially treated paper, lined with chipboard and the product itself sealed in a waxpaper or cellophane bag. There will be no change in price, in spite of the fact that in some cases the new containers cost more to produce than the former metal ones.

New Research Worker with Winthrop Chemical Company.

Dr. Chester M. Suter, professor of organic chemistry at Northwestern University and chairman of its department of chemistry, was in September appointed as Director of Chemical Research of Winthrop Chemical Company, Inc., and assumed his new duties immediately at the Company's research laboratories at Rensselaer, N. Y.

Woman's Auxiliary
to the
Medical Society of Virginia

President—MRS. H. W. ROGERS, Norfolk.
President-Elect—MRS. W. CLYDE WEST, Alexandria.
Recording Secretary—MRS. C. C. SMITH, Norfolk.
Corresponding Secretary—MRS. ALBERT G. HORTON, Norfolk.
Treasurer—MRS. REUREN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. C. E. ARNETTE, Alexandria.

Report of Roanoke Convention.

The Twentieth Annual Meeting of the Woman's Auxiliary to the Medical Society of Virginia was held October 5, 6 and 7.

The meeting, under the Presidency of Mrs. E. L. Flanagan of Richmond, was very well attended, in

spite of tire and gasoline shortage and also to the many defense jobs we are all now engaged in. There is no Auxiliary in Roanoke but no one would ever have guessed it from the gracious welcome we received. Their hospitality and thoughtfulness showed much consideration.

The Auxiliary luncheon at the Roanoke Country Club and Banquet at the hotel were most enjoyable occasions.

The incoming President, Mrs. H. W. Rogers, gave her inaugural address at the annual meeting held in the hotel. At this time, we had Dr. Roshier W. Miller of Richmond as guest speaker, using as his subject "The Five Senses" stressing the importance they will occupy in our future development.

STANDING COMMITTEES

Bulletin—MRS. FRANKLIN D. WILSON, Norfolk.
Cancer Control—MRS. HAWES CAMPBELL, Turpin.
Finance—MRS. PAUL PEARSON, Aylett.
Hygeia—MRS. E. T. TERRELL, Williamsburg.
Jane Todd Crawford Memorial—MRS. J. M. EMMETT, Clifton Forge.
Legislation—MRS. P. M. CHICHESTER, Richmond.
Leigh-Hodges-Wright Memorial Bed—MRS. FLETCHER J. WRIGHT, Petersburg.
Historian—MRS. HENRY AUGUSTINE LATANE, Alexandria.
Membership—MRS. LOUIS KOLIPINSKI, Petersburg.
Organization—MRS. E. LATANE FLANAGAN, Richmond.
Press and Publicity—MRS. C. E. ARNETTE, Alexandria.
Program and Health—MRS. C. E. HOLDERBY, Hilton Village.
Public Relations—MRS. R. M. REYNOLDS, Norfolk.
Revisions—MRS. WILLIAM LETT HARRIS, Norfolk.

Northampton-Accomack Auxiliary.

The Auxiliary to the Northampton and Accomack County Medical Societies held its regular quarterly meeting at the home of Mrs. Harry Lee Denoon, Nassawadox, on October 13th.

The meeting was opened with The Lord's Prayer. Minutes of the previous meeting were read by the secretary, Mrs. E. W. P. Downing. The President, Mrs. E. Holland Trower, next called for the report of the Treasurer. Mrs. Griffin W. Holland and Mrs. J. Walker Jackson gave very interesting reports of the State Auxiliary meeting held in Roanoke last week.

Funds were voted for the Leigh-Hodges-Wright Memorial, and the Jane Todd Memorial. A special contribution was set aside for our Christmas Gift to the Northampton-Accomack Memorial Hospital. A committee consisting of Mrs. W. T. Green, Mrs. H. L. Denoon, and Mrs. W. C. Henderson will meet with Miss Gardner, Superintendent of the Hospital, to determine the nature of the gift.

Officers for the coming year were elected as follows: President, Mrs. O. R. Fletcher of Sanford; Vice President, Mrs. W. C. Henderson of Nassawadox; Secretary, Mrs. C. E. Critcher of New Church; and Treasurer, Mrs. H. L. Denoon of Nassawadox.

A food sale held at the close of the meeting netted $7.55.

Those present at the meeting were: Mrs. J. B. Mears, Mrs. J. M. Lynch, Mrs. J. Fred Edmonds, Mrs. J. L. DeCormis, Mrs. J. W. Jackson, Mrs. Mrs. C. E. Critcher, Mrs. S. S. Kellam, Mrs. E. W. P. Downing, Mrs. J. H. Hiden, Mrs. B. N. Mears and Dr. Mears' mother, Mrs. Holland Trower, Mrs. J. E. Gladstone, Mrs. O. R. Fletcher, Mrs. G. W. Holland, Mrs. W. C. Henderson, Mrs. W. T. Green, and Mrs. H. L. Denoon.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us the same.

Emergency Care. By MARIE A. WOODERS, B. S., R. N., Principal, School of Nursing, Hackensack Hospital, Hackensack, New Jersey. And DONALD A. CURTIS, M. D., Lieutenant-Colonel, Medical Reserve; Instructor in Military Nursing, Hackensack Hospital. Philadelphia. F. A. Davis Company. 1942. xv-560 pages. 201 Illustrations. Cloth.

War Medicine. A Symposium. Winfield Scott Pugh, M. D., Editor, Commander (M.C.) U.S.N. Retired; Formerly Surgeon, City Hospital, New York. New York. Philosophical Library. 1942. 565 pages. Cloth. Price $7.50.

First Aid to the Injured and Sick. An Advanced Ambulance Handbook. Edited by Norman Hammer, M.R.C.S., Major, late R.A.M.C., T.A., Hon. Life Member, Examiner and Lecturer, St. John Ambulance Association; etc. Eighteenth Edition, 215th Thousand. Baltimore. The Williams & Wilkins Company. 1941. 336 pages. Cloth. Price $2.00.

Advances In Internal Medicine. J. Murray Steele, M. D., Editor, Welfare Hospital, New York University Division, Welfare Island, N. Y. Volume I. Interscience Publishers, Inc., New York. 1942. xi-292 pages. Cloth. Price $4.50.

Synopsis of Pathology. By W. A. D. ANDERSON, M. A., M. D., Assistant Professor of Pathology, St. Louis School of Medicine; Pathologist St. Mary's Group of Hospitals. St. Louis. The C. V. Mosby Company. 1942. 661 pages. With 294 text illustrations and 17 color plates. Cloth. Price $6.00.

Advances In Pediatrics. Adolph G. De Sanctis, M. D., Editor, New York Post Graduate Medical School and Hospital, Columbia University, New York. Volume I. Interscience Publishers, Inc., New York. 1942. ix-306 pages. Cloth. Price $4.50.

Preliminary Report On Children's Reactions to the War. Including a Critical Survey of the Literature. By J. LOUIS DESPERT, M. D., The New York Hospital, New York. 1942. Pamphlet of 102 pages.

Human Pathology. By HOWARD T. KARSNER, M. D. Professor of Pathology, Western Reserve University, Cleveland, Ohio. Sixth Edition, Completely Revised and Reset. J. B. Lippincott Company. Philadelphia. 1942. xxiii-817 pages. 460 Illustrations in black and white and 24 subjects in color on 16 plates. Cloth. Price $10.00.

Physicians' Reference Book of Emergency Medical Service.

A book of 268 pages, 6x9 inches in size, published by E. R. Squibb & Sons. It has been compiled, printed and distributed as a public service in the present emergency and contains no advertising. It consists chiefly of excerpts from medical literature, mostly British literature, giving the practical experience acquired in dealing with civilian war casualties. In each case reference is given to the original article. There are also complete author and subject indexes. It thus offers a complete medical digest to the many new casualty problems connected with aerial warfare.

E. C. L. MILLER.

A Handbook of Allergy for Students and Practitioners. By WYNDHAM B. BLANTON, M.A., M.D., Litt.D., Professor of Clinical Medicine and Chief of the Immunology Clinic, OPD., Medical College of Virginia, Richmond. Charles C. Thomas, Springfield, Ill. 1942. 190 pages. Illustrated. Cloth. Price $3.00.

This little book is surprisingly comprehensive. The 147 pages of text and 29 pages of appendix are well printed and arranged. The subject matter is presented objectively with crystal clarity. The preface, which follows, describes the book exactly:

The material which constitutes this book, a condensation of the subject of allergy as taught and practiced today, has been assembled to meet the needs of busy students and still busier practitioners of medicine.

The average medical student is naturally dismayed when one of the large treatises on this specialty is assigned as a textbook for his short course in general allergy. The need for a brief but inclusive text, to be supplemented by conference, quiz and clinical demonstration, has seemed to us to be urgent, and this is our excuse for the present handbook. It has been divided into eight chapters to meet the requirements of the courses now usually given in our medical colleges.

The text is not cluttered with references to original sources since full lists of important contributions are found in the larger books. Descriptions and statements are as condensed as has been thought consistent with clarity. Recognition is given all the diseases now believed to have an allergic basis even though some of them may occupy only temporary seats in the family of allergy.

Controversies are carefully avoided. Exception might be taken to the flat dismissal of the role of allergy in cardiac asthma. To mention other exceptions would be quibbling.

Perhaps the book would be more practical, for those who do not have access to the supplementary conferences and clinical demonstrations, if the sections on the technique and interpretation of skin tests, symptomatic treatment, and hyposensitizing injec-

tion schedules were a little more detailed. Brief sections could be added on the preparation of extracts, other than pollens, and on the treatment of reactions to pollen and other allergen injections.

Certainly no one who reads this book could wish for a better "condensation of the subject of allergy as it is taught and practiced today."

O. S., JR.

War Cases. Their Identification and Decontamination. By MORRIS B. JACOBS, Ph.D., Food, Drug and Insecticide Adm., U. S. Dept. of Agriculture, 1927; Chemist, Department of Health, City of New York, 1928; etc. Interscience Publishers, Inc. New York, N. Y. 1942. xiii-180 pages. Cloth. Price $3.00.

Mayor Fiorello H. LeGuardia, U. S. Director of Civilian Defense, in his pamphlet "Protection Against Gas" says the following:

"If war gas were to be used in an attack upon this country, an enemy probably would act without warning in order to exploit the effect to the utmost. Thorough preparation is the surest way to reduce the number of casualties and perhaps even to discourage the use of war gas entirely."

The reviewer is very much interested in this problem and heartily agrees with the Mayor's statement. One of the best ways of furthering this idea is for all of us to become more familiar with war gas generally, and so it was with much pleasure that the present monograph was read.

This book is divided into 7 sections dealing respectively with

1. Classification of the Chemical Agents.
2. The Physical Characteristics and Physiological Response of the War Gases.
3. Effect of War Gases on Materials, Water and Food.
4. Scheme of Analysis.
5. Detection and Determination of Arsenic.
6. Confirmatory Tests.
7. Decontamination.

This book is crammed with much useful and apparently accurate, up-to-date information, predominantly however, of a chemical nature. The only addition that the reviewer could suggest would be an additional chapter on the care of the civilian population in case of gas attacks.

This is a very readable book and is highly recommended to all physicians as a means of becoming more familiar with the several important phases of chemical warfare.

H. B. H.

The Care of the Aged. (Geriatrics). By MALFORD W. THEWLIS, M.D., Attending Specialist, General Medicine, U. S. P. H. Hospitals, New York City; Attending Physician, South County Hospital, Wakefield, R. I.; Special Consultant, Rhode Island Department of Public Health. Fourth Edition. Thoroughly Revised. With 50 Illustrations. St. Louis. The C. V. Mosby Company. 1942. 589 pages. Cloth. Price $7.00.

This is the fourth edition of one of the pioneer texts in geriatrics. The author covers such aspects as hygiene, hobbies, medico-legal problems, physiologic and pathologic changes, and the various diseases common in senility, as cancer and rheumatism. He includes many graphs showing the incidence of various diseases and causes of death throughout life. This aspect is excellent and should be expanded as more data become available, for we can only understand age, by comparing it to youth.

It would be easy to say that treatment of the aged does not differ appreciably from that of adults in general, and that therefore there is little excuse for such a text. However, this condition is probably due to our present ignorance, and this book will prove of value if it does nothing more than point out how little we know of the fundamental basis of senility. The reviewer would like to see the sections on physiologic, pathologic, and anatomic senile changes expanded, since it is only on such a basis that geriatrics can ever become a specialty. Space could well be found for such an expansion, by cutting down on the space devoted to treatment of various diseases, where such treatment does not differ from the usual. It is of interest however, that constipation may produce such severe effects in the aged. I consider it inadequate to make the dogmatic and unexpanded statements that the blood shows "increased viscosity and density" and "there are changes in the plasma and in the red blood cells". I was unable to locate a graph of the effect of age on basal metabolism. Certainly such a fundamental effect will be at the bottom of many senile changes. I am very dubious about the recommendation of "a non-irritating soap such as castile", and would have expected some mention of oily preparations to combat the dry skin of the aged, often exacerbated by frequent bathing. Use of estrogens in fractures could have been mentioned, if only to be condemned.

This book may be recommended to practitioners interested in geriatrics, not because it is so good, but because it is a beginning of a study which will probably increase constantly in importance as our population ages.

R. J. M.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, $2.00. Single Copies 25c.

VOL. 69. NOVEMBER, 1942. No. 11

Editorials

John Morehead Emmett

THE duties and responsibilities of the President of the Medical Society of Virginia have been greatly increased in the past decade. The medical profession as a whole has been under the critical observation of the public as well as politicians and it is increasingly necessary that responsible leaders of the profession should constantly bear in mind the importance of protecting time honored principles of medical practice while making the profession more efficient as an agency of the public welfare. The economics of medicine, which became a matter of much discussion about ten years ago and is not yet settled, requires constant thought on the part of the leaders of the profession. In addition to this, the correlation of the functions of organized medicine with the needs of the National Emergency has recently become a matter of primary concern. It will thus be seen that the present President of the Medical Society of Virginia will have responsibilities through the year of his incumbency—a very different matter from more remote times when his most anxious concern was the preparation of the presidential address. It is essential that the candidate for the presidency at this time should have, among other qualifications, untiring energy, the capacity for administration and be well acquainted with the present problems of medical practice.

The Society in its selection of Dr. John Morehead Emmett of Clifton Forge as President for the ensuing term has chosen a man who possesses these necessary qualifications to a high degree. Dr. Emmett was born in Oxford, North Carolina, June 17, 1893. He received his academic education at Horner's Military School and the University of North Carolina. He was graduated from the Medical College of Virginia in 1915 at the early age of 22 years. For two years following his graduation he was associated with Dr. C. C. Coleman of Richmond in the practice of surgery. This association was terminated by World War I, in which Dr. Emmett was commissioned

lieutenant in the Naval Medical Corps, in charge of the surgical division of the Naval Hospital, Marine Barracks, Quantico, Virginia, with later appointment to the surgical staff of Naval Hospital No. 4, Brest, France.

After his discharge from the Naval Medical Corps, Dr. Emmett resumed his surgical practice, becoming associated with Dr. William Sharpe of the Polyclinic Hospital in New York City and later with Dr. Robert J. Wilkinson at the Chesapeake and Ohio Hospital in Huntington, West Virginia. It is interesting to note here that Dr. Emmett's former associate, Dr. Wilkinson, is now President of the Medical Society of West Virginia.

Recognition of Dr. Emmett's administrative and surgical ability was shown by his appointment as Chief Surgeon of the Chesapeake and Ohio Hospital in Clifton Forge in 1920. Under his direction there was rapid expansion and modernization of this

JOHN MOREHEAD EMMETT, M.D.,
President, Medical Society of Virginia

hospital. Further recognition was given him by the railway company in 1939 when he was appointed Chief Surgeon of the Chesapeake and Ohio system to succeed his friend, Dr. William T. Oppenhimer, retired. At the same time he retains active direction as Chief Surgeon of the Chesapeake and Ohio Hospital in Clifton Forge.

While always seriously attending his exacting professional duties, Dr. Emmett's great energy enables him to participate, apparently without difficulty in a number of civic and extraprofessional activities. He is interested in all athletic sports, plays a good game of tennis, a golf game not too good and spends whatever leisure time he can in hunting and fishing. His interest in the game life of Virginia was rewarded by his appointment to the State Game Commission by Governor Darden in 1942.

Dr. Emmett was married to Annie Cleveland Cone, of Richmond, in 1920. His home in Clifton Forge is widely known for its hospitality which is a natural result of his friendly, sociable nature. In this hospitality as well as in his professional career, he has the unselfish cooperation and encouragement of Mrs. Emmett, whose gracious manner has made their home a place of delightful entertainment. Dr. Emmett is an elder in the Presbyterian Church in Clifton Forge. He is a member of important medical and surgical organizations, including the American Medical Association, The Southern Surgical Association, Fellow of the American College of Surgeons, the Southeastern Surgical Congress and a member of the Founders' Group of the American Board of Surgery.

Few Virginia surgeons have enjoyed to such a degree the confidence of professional associates and certainly none has reached a higher place in the estimation and respect of the people of his community. A surgeon of judgment and skill, his ability is recognized by his surgical colleagues throughout the State. In the deliberations of medical organizations his counsel is highly valued and while he has positive convictions, he is tactful, kind and considerate in dealing with opposing views.

The new President will assume the duties of his office with the cordial support of a united profession. There is every reason to believe that he will carry out fully the high traditions of his office and that under his leadership the profession may look with confidence to skillful and efficient direction of its affairs in these troubled times.

C. C. C.

Haec Olim Meminisse Juvabit

WITH this issue of the VIRGINIA MEDICAL MONTHLY the present editor ends his happy association with the sixty-nine year old official publication of the Medical Society of Virginia. He has seen ten volumes through the press, weathering as best they could the ups and downs of one of the most turbulent periods of American medical history. For medicine has not escaped the octopus philosophy of the more abundant life. Her very foundations have been shaken, and the superstructure must be constructed anew—rebuilt to conform to the economic and social doctrines of the new world which is inevitable when the curtain goes down at last upon the tragedy of this present global war.

Our conception of the function of a state medical journal has not been original, but it would seem to have been correct. The VIRGINIA MEDICAL MONTHLY has been an open forum in which the members of the society could express themselves without favoritism. If they have sometimes written foolish things, sometimes trite things, sometimes erroneous things, they have oftener written things well worth publishing in any medical journal. Nor have we been without the ferment of ideas originating beyond our bounds, for rarely has an issue gone to press without carrying a contribution from some authority outside the state. From time to time new departments have been added to the journal, generally, we believe, with profit to our readers. These departments have served as useful bulletin boards for the work of some of our special committees. The importance of public health has received recognition in each issue, the reports which the Commissioner has ably contributed have been more than statistical accounts of infectious and contagious diseases in the state. The News Notes have served the laudable purpose of keeping fellow member posted concerning fellow member—where he has been and where he is going. Honors, accomplishments, marriages and deaths have been promptly and accurately reported.

Editorially we have been untrammeled, free to follow a policy which we have felt was liberal without being extreme, conservative without being hidebound. Though

revering the ancient and honorable structure of medicine, we have long since sensed the need for a shakedown, and repeatedly have urged a physician-planned reconstruction of the instruments and agents of the healing arts and sciences to fit them more harmoniously and effectively into a new social and economic pattern.

It has been our belief that the ideals of a State medical journal should not be very far removed from the ideals of the medical society itself. No medical organization has a right to feel proud of itself if it is ridden by pressure groups, and is concerned only with its own selfish position. If we can think of nothing higher than the conditions which protect us in our work from competition, even though it be unworthy competition, we are doomed. We will continue to be a noble profession, looked up to and respected by the public only if we think chiefly in terms of others and not of ourselves. We will fulfill our high destiny if we have as our objectives such worthy purposes as a more equitable distribution of medical services, smaller costs for special services, higher standards of education and the abolishment of such iniquities as the office of coroner and the office of jail physician as they are at present provided for in the Virginia code of laws.

The editor of a medical journal is just a voice, too often he is a voice crying in the wilderness, and with no language but a cry.

A Lawyer Looks at the Law

ANYONE who has seriously attempted to read and master the laws pertaining to the practice of medicine as they are found in the Code of Virginia will be grateful to Mr. Ralph T. Catterall for the careful summary and appraisal of them which he has prepared for this issue of the VIRGINIA MEDICAL MONTHLY. Mr. Catterall will be remembered as a graduate of the Harvard Law School, Associate Professor of Law at the University of Richmond and President of the Richmond Bar.

His is a trenchant, delightfully frank and reasonable restatement of the Virginia statutes which pertain to the practice of the healing arts in the State. It is relieved here and there by a gentle thrust of humor, a touch of nipping satire, or a forthright exposure of what must some day be righted.

The Passing of the Annals

THE Annals of Medical History, after twenty-four years of fruitful life, under the able editorship of Dr. Francis R. Packard, announces that with its forthcoming issue it will go out of existence. Born at the time of World War I, wet nursed by none other than Sir William Osler himself, nourished and supported by our best medical historiographers here and abroad, it has not been able to survive World War II. The passing of the *Annals* may be attributed to a number of factors, some economic, some expressive of the inertia concerning historical research and expression which is to be expected in times like these, but chiefly to the increasing strategic importance of the *Bulletin of the History of Medicine* which serves as the official organ of the American Association of the History of Medicine and the Johns Hopkins Institute of the History of Medicine, and which is more and more attracting the attention of the medical historian. *Le Roi est mort! Vive le Roi!*

Medicine to the South of Us

AMBASSADORS in White (Henry Holt and Company, Inc., New York, 1942) is a new book about medicine by a layman; Charles Morrow Wilson, the author; South America, the scene. At this time when the necessity for hemispheric solidarity

and prosperity is uppermost in the public consciousness it is well to have brought to our attention a phase of South American life which is explanatory of much that has troubled us and which we have not fully comprehended. Mr. Wilson's book tells the story of disease and death in the American tropics; the story of the heroic efforts of a few remarkable men to convert areas formerly regarded as the white man's grave into salubrious and profitable regions of habitation; and the stories of the magnificent contributions of Carlos Finlay, Walter Reed, William Gorgas, William Deeks and Hideyo Noguchi to the solution of South America's health problems.

It is the story of "a sick man's society". Here we learn that it is not, as with us, heart disease, pneumonia, cancer, cerebral hemorrhage and nephritis that are the captains of the men of death, but tuberculosis, influenza-pneumonia, malaria, diarrhea, diphtheria, typhoid and meningitis. Here we learn that although the birth rate in South America is three times what it is in the United States of America, it has just begun to catch up with the death rate. Life expectancy, which in the United States is about sixty-two years, in Latin America is anywhere between fifteen and thirty-five years less depending upon the locality in question. The book gives a picture of a brave, loyal and able intelligentsia, struggling with the great forces of nature, with poverty, ignorance and epidemic disease.

Furthermore it offers one reason more why North America should be interested in South America. We are sending thousands of our fighting forces to the tropics. It behooves us to do something to control the pestilence that awaits them there. And not for their sakes alone. In time many of these soldiers will return to this country bringing with them intestinal infections, virulent malaria and other diseases which we have hitherto for the most part escaped. The exigencies of war and the accelerated tempo of international travel will certainly also open new channels for the spread of tropical disease to this country. It is high time we heard more about the health of Latin America and were defending ourselves vigorously against those diseases which have so disastrously retarded our neighbors' national development.

Societies

The Southwestern Virginia Medical Society

Met in Radford on September 23rd under the presidency of Dr. W. C. Caudill, Pearisburg. There were 78 members present, and the following program was presented: Virus Pneumonia and Its Treatment by Dr. J. J. Giesen, Radford; Some Phases of Vitamin Therapy by Dr. P. S. Smith, Abingdon; Treatment of the More Common Pelvic Diseases by Dr. A. P. Jones, Roanoke; Hypertension—Its Etiology and Treatment by Dr. K. D. Graves, Roanoke. Following dinner, Dr. Caudill gave his presidential address on Our Duties as Physicians in the Present Emergency, and Dr. J. T. Callaway, professor of Dermatology at Duke University Medical School, spoke on the Diagnosis and Treatment of the More Common Skin Diseases.

At the business session, officers for the coming year were elected as follows: President, Dr. James P. King, Radford; vice-president, Dr. A. B. Graybeal, Marion; and secretary-treasurer, Dr. G. C. Williams, Pearisburg. Drs. C. C. Fabric, R. F. Hawkins, and H. L. Greenberg, all of Radford, were elected members, and it was decided to hold only a dinner meeting in the Spring but a full meeting in the Fall.

The Tazewell County Medical Society

Met on September 17th, at which time Dr. Rufus Brittain spoke on "The Purposes of a Medical Society." At the business session, the following officers were elected: President, Dr. M. B. Crockett, Tazewell; vice-president, Dr. Lee Harris, Rich-

lands; and secretary-treasurer, Dr. Mary E. Johnston (re-elected), Tazewell.

Norfolk County Medical Society.

At the meeting of the Society on October 19th, the program was by two members of the staff of the Naval Hospital—Lt. Commander Daniel J. Pessrgno and Lt. Commander Judson D. Wilson. The former presented a paper entitled "Novocaine Block of the Lumbar Sympathetics", and the latter spoke on "Treatment of Metacarpal Fractures by Use of Kirschner Wire".

Dr. A. Brownley Hodges is president of the Society and Dr. Lockburn B. Scott, secretary.

News

Dr. Blanton Retires as Editor.

It is with regret that we announce the retirement of Dr. Wyndham B. Blanton as editor of the MONTHLY, effective following this issue. He has served the journal well and the Society is grateful for the splendid work he has done for the past decade.

Dr. M. Pierce Rucker, who will succeed Dr. Blanton, is by no means a novice in this line of work, and we predict a continuance of the excellent editorial policies of the MONTHLY.

The Roanoke Meeting in Retrospect.

The meeting of the Medical Society of Virginia in Roanoke, October 5, 6, and 7, under the presidency of Dr. Roshier W. Miller of Richmond, is full of happy memories for all who attended and everything moved smoothly. Many familiar faces were missed among the doctors, however, due to the number now in the Government services. In addition to the ladies and exhibitors, there was a registration of three hundred and forty-two doctors. The "blackout" which came about the end of the first evening's session proved an opportune time for friends to meet and chat in the lobby and so rather enhanced the charm of the meeting.

On account of atmospheric conditions, Dr. James E. Paullin, guest for the first evening session, was unable to land from plane, and so could not get to the meeting in time for his address. However, a motion picture entitled "How the United States Navy Makes the Normal Human Plasma" was shown and completed the evening program. Motion pictures were also shown just preceding the Tuesday and Wednesday morning sessions. The banquet, floor show and dance on Tuesday evening proved enjoyable as always.

At the close of the Wednesday morning session, Dr. J. M. Emmett of Clifton was inducted into office as president, after which the meeting adjourned to Catawba Sanatorium where lunch was served, followed by a short scientific program by members of the medical staff in conjunction with the Society of Chest Physicians.

Officers elected to serve with Dr. Emmett are: President-elect, Dr. C. B. Bowyer of Stonega; vice-presidents, Dr. W. L. Powell of Roanoke, Dr. W. R. Payne of Newport News, and Dr. P. W. Boyd of Winchester. The House of Delegates voted that they wished to have a meeting in 1943 but the place and time were left to the Council.

Minutes of the general and business sessions of the Society will appear in the December MONTHLY.

A Correction.

Through inadvertence, in the listing of officers and councilors elected at the Roanoke meeting of the Medical Society of Virginia, the daily newspapers gave the name of Dr. James P. King of Radford for the Sixth District. This was in error as the Councilor elected for that District is Dr. J. J. Giesen of Radford. We regret the error.

Virginia Obstetrical and Gynecological Society.

At the annual meeting in Roanoke on October 6th, the following officers were elected: President, Dr. H. C. Spalding; vice-president, Dr. A. L. Carson, Jr.; and secretary-treasurer, Dr. W. C. Winn. All are from Richmond.

Virginia Orthopedic Society,

At the annual meeting in Roanoke on October 6th, elected the following officers for the coming year: President, Dr. J. B. Dalton, Richmond, and secretary-treasurer, Dr. J. T. Tucker, also of Richmond.

Virginia Pediatric Society.

Dr. J. S. Weitzel, Richmond, was named President; Dr. E. A. Harper, Lynchburg, vice-president;

and Dr. Emily Gardner, Richmond, secretary-treasurer of this Society at its annual luncheon meeting in Roanoke on October 6th.

Virginia Radiological Society.

At the meeting of this Society in Roanoke on October 6th, all officers were re-elected as follows: President, Dr. Wright Clarkson, Petersburg; vice-president, Dr. Clayton Eley, Norfolk; and secretary-treasurer, Dr. C. M. Peterson, Roanoke.

The Virginia Urological Society

Held its annual luncheon meeting in Roanoke, October the 6th, at which time the following officers were elected: President, Dr. B. E. Harrell of Norfolk; vice-president, Dr. T. B. Washington of Richmond; and secretary-treasurer, Dr. Warren W. Koontz (re-elected) of Lynchburg. The past president, Dr. L. D. Keyser of Roanoke, presented a Constitution and By-Laws for the Society which his committee had worked up and this was adopted unanimously.

The Southern Medical Association

Is holding its annual meeting in Richmond, November 10, 11 and 12, and indications are that it will be largely attended in spite of conditions incident to wartime. Over a thousand reservations had been made before we go to press, and requests for rooms are still coming in. The Association extends an invitation to all white physicians who are members of their county and state medical societies to attend. The large number of sections of the Association and conjoint meetings offer something of interest for every one.

Alumni reunions and the Women's Association of the Southern will hold dinners on Wednesday evening, the 11th, and fraternity luncheons will be on Thursday. Do not wait for these, however, but be on hand for the President's reception and grand ball on the opening evening, Tuesday 10th. Exhibits—scientific, technical and hobby—and motion pictures will be had in addition to the scientific program.

Dr. M. Pinson Neal of Columbia, Missouri, is president, Mr. C. P. Loranz of Birmingham, Alabama, secretary-manager of the Association, and Dr. Wyndham B. Blanton, Richmond, general chairman for this meeting.

The Seaboard Medical Association of Virginia and North Carolina

Will hold its 47th annual meeting at Wilson, N. C., December 1-2-3, under the presidency of Dr. G. Erick Bell of Wilson. A good program is in the making. The association will be opened with an address by His Excellency, James M. Broughton, Governor of North Carolina. A large number of members and many visitors are expected.

Dr. Nelson Mercer,

Who formerly practiced in Richmond but was more recently located in Philadelphia, has moved to Martinsville, where he will be on duty at the Nylon Division Plant of the E. I. du Pont Company.

Dr. J. E. Haynsworth,

Recently of Clifton Forge, has located in Lynchburg, where he is associated with Dr. Elisha Barksdale, with offices in Allied Arts Building.

The Post-Graduate Clinic

At the University of Virginia will be held this year on December 8th and 9th for Otolaryngology and December 10th and 11th for Ophthalmology. Among the out of State speakers will be Dr. Marshall Taylor of Jacksonville, Fla., Dr. George Shambaugh, Jr., of Chicago, Dr. Staunton Wishart of Toronto, and Dr. A. C. Furstenberg of Ann Arbor, Mich. Further information may be obtained from Dr. Fletcher D. Woodward, University Hospital, Charlottesville.

A.M.A. Meeting Cancelled.

This convention, scheduled for San Francisco in 1943, has been cancelled due to the tremendous demands on the medical profession made by the war and the strain of transportation facilities that would be imposed by such a meeting. This is the third time in the history of the American Medical Association that an annual meeting has been cancelled—the first was in 1861 because of the outbreak of the Civil War, and the second in 1862 because of the demands that the war was making on the profession. However, there will be a meeting of the House of Delegates, Board of Trustees, Scientific Councils, and Officials in Chicago in June of 1943.

New Medical Journal.

The American Gastroenterological Association on January 1, 1943, will publish the first issue of a new Journal to be called *"Gastroenterology"*. It will appear monthly and the subscription price will be $6.00 a year. *Gastroenterology* invites for publication clinical and investigative contributions which are of interest to the general practitioner as well as

the specialist and which deal with the diseases of digestion and nutrition. Manuscripts should be sent Dr. A. C. Ivy, 303 East Chicago Avenue, Chicago. Letters regarding subscription and business matters should be sent Mr. R. S. Gill, Williams and Wilkins Company, Baltimore, Maryland.

The Gill Memorial Eye, Ear and Throat Hospital

Will hold its seventeenth annual Spring Graduate Course in Roanoke, from April 5 to April 10, 1943. Among the guest speakers will be the following:

Dr. C. H. Best, Toronto, Canada.
Dr. John J. Shea, Memphis, Tennessee.
Surgeon-General Ross T. McIntyre or his personal representative, Washington, D. C.
Dr. Bruce Fralick, Ann Arbor, Michigan.
Dr. George P. Guibor, Chicago, Illinois.
Dr. Willis K. Knighton, New York City.
Dr. Thomas E. Walsh, St. Louis, Missouri.
Dr. Peter C. Kronfield, Chicago, Illinois.
Dr. Perry Goldsmith, Toronto, Canada.
Dr. John J. McLean, New York City.
Dr. J. R. Lindsay, Chicago, Illinois.
Dr. French K. Hansel, St. Louis, Missouri.
Dr. LeRoy A. Schall, Boston, Massachusetts.
Dr. A. L. Brown, Cincinnati, Ohio.
Dr. C. C. Coleman, Richmond, Virginia.

Birth.

Drs. H. Jacob and Josefina Guarch Flax, both of class of '40, Medical College of Virginia, now of Monati, Puerto Rico, announce the birth of a son, Hjalmar Lawrence Flax, on August the 17th.

Dr. William F. Hatcher,

Formerly of Clifton Forge and a member of the class of '29, Medical College of Virginia, has moved to Roanoke to take over the practice of Dr. Charles A. Young who is now serving in the United States Navy. Dr. Hatcher returned to Virginia from Youngstown, Ohio, where he had practiced for the past five years.

American Board of Ophthalmology.

Because of the War Emergency, the Board announces the following additional examinations:

New York City—December 13th to 16th.

Los Angeles—January 15th and 16th.

At the last meeting it was decided to cancel the 1943 written examination, to include in the oral examination all of the subjects previously covered by the written examination, and to dispense temporarily with the requirement of case reports. The oral examination will probably require two or three days.

Formal application on the proper blanks for the December and January examinations must be filed with the Secretary not later than November 1st. These may be secured from the American Board of Ophthalmology, 6830 Waterman Avenue, St. Louis, Mo.

Dr. John L. Couper,

Class of '41, University of Virginia, Department of Medicine, has not located at his former home in Lexington, as stated in the last issue of the MONTHLY, but is having his mail addressed there while he is overseas with the St. Luke's Hospital Unit of New York City.

News From University of Virginia, Department of Medicine.

Dr. Sydney Britton, professor of physiology, attended a conference on adrenal physiology called by Dr. Frank Fremont Smith, Secretary of the Josiah Macy Jr. Foundation at the Beekman Hotel in New York City on September 9th and 10th.

Dr. Tiffany Johns Williams, professor of obstetrics and gynecology, attended the meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons at Hot Springs on September 11th, where he presented a paper on "Hydatidiform moles and associated tumors of the chorion".

Dr. Vincent W. Archer, professor of roentgenology, attended a meeting of the American Roentgen Ray Society in Chicago from September 15th through the 18th. He was chairman of the scientific research committee, member of the executive council, and read a paper on "An ocular test for sensitivity to diodrast prior to intravenous urography". On September 24th Dr. Archer addressed the Valley of Virginia Medical Society in Staunton, his subject being "The care of patients with advanced malignancy".

On October 12th Dr. Cecil K. Drinker of the Harvard University of Public Health gave the annual Alpha Omega Alpha address. His subject was "The Genesis and Resolution of Lung Transudates and Exudates as Viewed by a Physiologist".

Medical College of Virginia News.

Dr. C. C. Coleman, professor of neuro-surgery, attended the meeting of the Raleigh Academy of Medicine in North Carolina and gave a paper on War

Wounds of the Nervous System. Dr. Coleman also gave a paper on Surgical Treatment of Orbital Tumors at the Roanoke meeting of the Medical Society of Virginia.

Dr. Porter P. Vinson, professor of bronchoscopy, esophagoscopy, and gastroscopy, will give several papers in the next two months, first at the Inter-State Postgraduate Medical Assembly in Chicago on the Treatment of Pulmonary Abscess, another on Injuries of the Esophagus at the American College of Surgeons symposium in Chicago on November 17th, and on December 7th will speak at the Roanoke Academy of Medicine on Local Use of Sulfonamide in Diseases of the Trachea and the Bronchial Tree.

Dr. Lewis E. Jarrett, director of the hospital division, attended the annual meeting of the American Hospital Association in Chicago the second week in October.

Dr. Jacques P. Gray, dean of the school of medicine, and Dr. William T. Sanger, president, will attend the annual meeting of the Association of American Medical Colleges in Louisville, Kentucky, the latter part of October. Following this meeting Dr. Gray will also attend the meetings of the American Public Health Association in St. Louis and Dr. Sanger will attend a meeting in the same city on nutrition called by the Federal government.

The college has received a grant of $11,737 from the Federal government for loans to students, and one of $250 from Van Pelt and Brown for research.

Dr. Edward J. Van Liere, dean of the school of medicine, West Virginia University, was a recent college visitor.

The following members of the faculty have completed the course given by the Federal government on decontamination and treatment of gas and fire casualties: Dr. Harry Walker, Dr. Harvey B. Haag, Dr. Everett I. Evans, Dr. Arthur Klein, Dr. M. J. Hoover, Dr. J. C. Forbes, and Dr. I. C. Riggin.

Dr. R. B. Turnbull,

Formerly on the staff of the Blue Ridge Sanatorium at Charlottesville, on September 15th became Principal Medical Officer (clinician) of the special Tuberculosis-Pneumonia Control Program sponspored by the Commonwealth Fund of New York and the State Health Department of Tennessee in connection with the Sumner County Health Department. His headquarters are at Gallatin.

Married.

Lt. Robert Hay Taylor, M.C., U.S.A. Air Force, Maplewood, N. J., and Miss Ann Baxter Adamson, Richmond, October 24th. Dr. Taylor is a graduate of the Medical College of Virginia in 1941.

American College of Surgeons Cancels Clinical Congress.

The annual Clinical Congress of the American College of Surgeons which was scheduled to be held in Cleveland November 17-20, 1942, was cancelled by the Board of Regents of the College at a meeting held in Chicago, October 14. The Regents by this action took cognizance of the desire of the profession to do nothing which would interfere with the successful prosecution of the war program such as would be caused by temporary absence of its members from civilian duties during the period of the Congress, embarrassment of the transportation system, and interference with the work of the local profession in Cleveland in preparations and presentations incident to such a meeting.

Dr. Linwood D. Keyser,

Roanoke, was guest speaker at the Nineteenth Annual Meeting of the South Central Section of the American Urological Association held at Oklahoma City, September 24-26. The subject of his address was "Urinary Lithiasis: A Review of a Quarter Century of Research".

For Sale—

Used short wave diatherm and also McKesson portable Gas Machine. Both in first class condition. Address No. 175, care this journal, 1200 East Clay Street, Richmond. (*Adv.*)

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Small (Little Giant) x-ray machine, diathermy machine, violet ray machine, ultra violet ray machine, and other office equipment. Write "X-Ray", care this journal, 1200 East Clay Street, Richmond. (*Adv.*)

Medical Officers Needed—Tennessee Valley Authority.

The Tennessee Valley Authority is in urgent need of medical officers who are not eligible for military service and who are willing to accept assignments to war industrial activities (construction, manufac-

ture of war chemicals, and manufacture of hydro-electric power) as their participation in the all out war effort. Responsibilities include physical examinations, industrial hygiene, care of injuries, medical care to families in remote construction areas, and general public health responsibilities in construction camps and villages. Salary ranges from $3200 to $4200 per annum with opportunity for promotion. For further information write to Dr. E. L. Bishop, Director of Health, Tennessee Valley Authority, Chattanooga, Tennessee, or to the Personnel Department, Tennessee Valley Authority, Knoxville, Tennessee.

Obituaries

Dr. Littleberry Stainback Foster,

Well known physician, died at his home in Williamsburg on September 23rd, following an illness of several weeks. He was a native of Mathews County and eighty-six years of age. Dr. Foster graduated from the New York University Medical College in 1879, following which he practiced in Mathews County for a number of years. He was formerly superintendent of the Eastern State Hospital in Williamsburg, and was at one time a member of its Board, the State Board of Education, the Medical Examining Board of Virginia, and superintendent of the Mathews County schools. Dr. Foster had been a member of the Medical Society of Virginia for fifty-five years. Five children survive him.

Dr. Edwin Willis Twyman.

Dr. Twyman died on September 15th. He was a native of Madison County and eighty-nine years of age. He received his early education at Locust Dale Academy and Randolph Macon College and graduated in medicine from the Louisville Medical College, Louisville, Kensucky, in 1875. He then practiced medicine in Madison County until his retirement a few years ago.

Dr. Twyman was most active in county, state, and national politics and a steward in Walker's Methodist Church. He was for many years a member of the Medical Society of Virginia and the American Medical Association.

He married Miss Ada S. Fray, also of Madison County, in 1881. They had no children.

Dr. Twyman was greatly loved and honored as a physician and friend. His kindness and benefactions knew no color nor creed. He and his esteemed wife were loved by all. A landmark in medicine in Virginia has passed.

J. W. WALTERS, M. D.

Dr. John F. Armentrout,

Retired roentgenologist of Roanoke, died at his home in that city on September 28th. He was a native of Rockbridge County and seventy-five years of age. After receiving his academic degree at the University of Virginia, he entered the University of Maryland for his medical work and graduated there in 1903. He resided for a time in Staunton before locating in Roanoke. He had been a member of the Medical Society of Virginia since 1907. His wife and two children survive him.

Dr. Chastine G. Williams,

Oak Grove, died October 3rd after a short illness. He was seventy years of age and a graduate of the former University College of Medicine, Richmond, in 1896. Dr. Williams had practiced in Westmoreland and King George Counties for thirty-four years.

Dr. Robert Bagley Cralle, Jr.,

Farmville, died September 27th, at the age of thirty-nine. He was a graduate of the Medical College of Virginia in 1931. Dr. Cralle practiced for a time at Drakes Branch before returning to his former home at Farmville. He was formerly a member of the Medical Society of Virginia.

Dr. Henry Stevenson Wailes,

Salisbury, Md., died October 16th. He was sixty-nine years of age and a graduate of the former University College of Medicine, Richmond, in 1901.

Dr. Lewis Booker

New Castle, Del., died September 29th. He was born in Richmond in 1887 and graduated in medicine from the University of Virginia in 1910.

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[1]*Fauley, G. B.; Freeman, S.; Ivy, A. C.; Atkinson, A. J., and Wigodsky, H. S.: Aluminum Phosphate in the Therapy of Peptic Ulcer, Arch. Int. Med. 67: 563-578 (March) 1941.* *Reg. U. S. Pat. Off.

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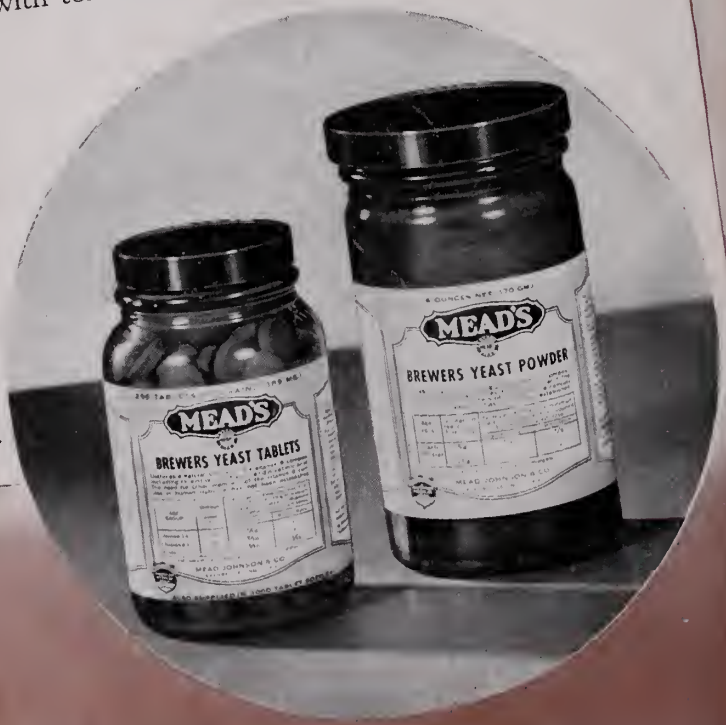

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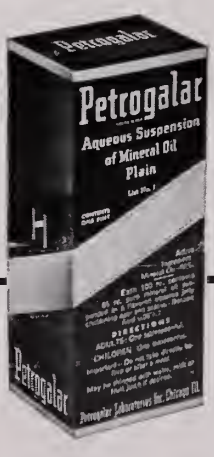

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Official Publication of the Medical Society of Virginia

Vol. 69, No. 12
WHOLE No. 1086.

RICHMOND, VA., DECEMBER, 1942.

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Guest Editorial

Loyalty of Selective Service Physicians

"IF YOU want a job well done, get a busy man to do it." This is indeed a wise maxim, for surely the Virginia physicians are a busy lot these days, and the job that they are doing for the Selective Service System is an all important job well done.

Over 75,000 man hours of professional service have been their contribution to the effort by examining men to be inducted into the Army. This service rendered by the Virginia physicians to their Government, computed in man hours, means no less than 9,375 eight-hour days, or, according to the Department of Labor, forty-hour week standard, a total of 1,875 weeks or 36 years of service crowded into twenty-four months by the combined 900 Virginia physicians.

The Medical Section of the State Headquarters for Selective Service began to function October 5, 1940, and now, after two years of dealing with Virginia physicians and observing their loyalty, it is a source of great pleasure to comment on their fidelity to their country.

Virginia physicians responded promptly to our call and, during the past two years, 150,000 examinations have been made by the 900 physicians designated as examining physicians, members of Medical Advisory Boards, and Appeal Boards. Their loyalty, efficiency and promptness is best known by us and this intimate knowledge of their work qualifies us to certify to the true character of Virginia physicians. A brief, and therefore inadequate commendation, is that their presence has always indicated their willingness to serve and assume responsibility for the conduct of a case. They imply a reasonable professional knowledge and a strong desire to use their every effort for the welfare of their patients with sympathetic understanding, patience, and discretion, until cure, death, or dismissal terminates the obligation.

The patients by their calls have implied confidence in the professional ability of the physicians, and faith in them as men of honor. They have, by the same token, without reserve placed the professional conduct of their affairs in the physicians' hands, offering opportunity for the fullest exercise of judgment. Accordingly, we hold the opinion, from close relationship with Virginia physicians for the past two years, that seldom or never are patients' lives placed at a hazard in Virginia.

Medical education, medical ethics, and medical doctrines have taught physicians to place the welfare of patients and people above everything else. Seldom is it observed that Virginia physicians allow financial returns to conflict with that welfare, which is not only emphasized, but proved by their labor for Selective Service in the past two years without compensation.

This spirit deserves commendation. It has a meaning for others, it is inspiring to know about, and we feel obligated to such institutions as the Medical College of Vir-

ginia and the University of Virginia Medical School for those doctrines that were taught as early as 1838 and are supported as loyally today as those pioneers of the yesteryear intended them to be enforced.

Virginia physicians have shown their loyalty as citizens on many occasions, and while we are not asserting that they are more loyal than others, or that they have more character than others, their opportunity in battle, or times like these, provides an outlet for their instincts. When we observe that they draw no line between enemy and friend, by suturing the wound of a captured prisoner with the same care as they would that of one of their own soldiers, it goes only to emphasize again that they are the carriers of major cultural values.

Offices, headquarters and sections are either successful or not successful for a reason; so when we report that the medical section of this headquarters has functioned successfully for two years, we also have the reason—it is loyalty and character of Selective Service Physicians.

The State of war has enlarged the scope of the Hippocratic Oath and, Virginia physicians in responding so nobly to the call of the State Headquarters for Selective Service, have lived up to the letter of the law of their sacred oath, and earned the appreciation and gratitude of the Selective Service Headquarters. However, no praise or commendation for a job well done ever equals the self satisfaction of the individual for what he knows in his heart is conscientious effort, and such being the case, the physicians of Virginia can look upon the work that they are performing for the Selective System with justifiable pride and satisfaction.

ERNEST T. TRICE, LT.-COLONEL M. C.,
Medical Advisor, State Headquarters for Selective Service.

FOCAL INFECTIONS*

ALAN C. WOODS, M.D.,
Ophthalmologist-in-Chief, The Johns Hopkins Hospital,
Baltimore, Maryland.

One of the most important doctrines in American ophthalmology is the belief that certain inflammatory ocular disorders are caused by remote foci of infection—the theory of focal infection. This concept of the cause of certain systemic diseases and remote localized inflammations was introduced by Hunter in 1901,[1] and was elaborated chiefly by Billings from 1910 to 1916. During this same period E. C. Rosenow published his dramatic reports on the transmutation of bacteria, and the experimental production of diseases of joints, endocardium, gallbladder, stomach, duodenum, etc., by the injection of bacteria isolated from similar disease foci in humans. In 1916 Billings[2] in his Lane Medical Lectures reviewed the entire subject of focal infection to date, and presented the clinical and experimental observations which he believed substantiated the theory, removed it from the general class of theories, and established it on a scientific basis.

This theory as presented by Billings in 1916 may be summarized as follows: A primary focus of infection is a circumscribed area of tissue infected with micro-organisms and located usually in the tissues communicating with a mucous or cutaneous surface. From this primary focus of infection, either by hematogenous or lymphogenous pathways, usually the former, systemic infection and intoxication may occur, and the infecting organisms spread to other remote tissues of the body and there produce secondary foci of infection.

The primary focus of infection may be in the teeth in the form of a periapical abscess or pyorrhea alveolaris, in the tonsils, in subcutaneous abscesses, in the accessory nasal sinuses, in the respiratory tract, including bronchiectasis, in the gastro-intestinal tract, including the rectum with its rich sup-

*Read by invitation before the Richmond Academy of Medicine, Richmond, May 12, 1942.

ply of hemorrhoidal veins, the auxiliary organs of digestion, including such conditions as cholecystitis, appendicitis, intestinal ulcers and intestinal stasis; the genito-urinary tract, including conditions such as endometritis, salpingitis, seminal vesiculitis, prostatitis, cystitis, and pyelitis. From such primary foci the adjacent lymph nodes may become secondarily affected, so that even when the primary focus is eradicated and healed the secondarily infected regional lymph nodes may remain as reservoirs from which the infection may spread.

The infection in these primary foci is exogenous. In the mouth this may arise from the normal bacterial flora, assisted by the action of entamoeba buccalis, with resulting infection of the peridental membrane and subsequent pyorrhea and periapical abscesses. The tonsils become infected by contaminated air and infected food. Obstruction of the upper air passages prevents proper drainage of the nasal cavities and in turn produces infection of the accessory nasal sinuses, middle ear, mastoid, mucous membranes of the nose, and later of the bronchi. Focal infection of the gastro-intestinal tract may arise from auto-infection or auto-intoxication of the intestinal tract, including intestinal stasis. The gall-bladder, stomach, pancreas and appendix may be secondarily involved by hematogenous infection from an original primary focus in the teeth, tonsils or nasal sinuses, and may thereafter serve as primary foci for further infection. The genito-urinary tract may become infected by pyogenic bacteria at childbirth, by abortion or miscarriage, and especially by venereal infection with the gonococcus.

From the primary foci of infection disease is assumed to spread to other portions of the body. The reason why all individuals do not become ambulant museums of pathology (since more or less primary infection is inevitable in even the most carefully regulated existence) is, first, on account of the normal resistance mechanism of the body, the leucocytes, phagocytes, etc., and, second, by the formation of specific antibodies against the infecting micro-organisms which neutralize their harmful effect and inhibit their activity. Certain individuals are naturally more susceptible to infection than others, and it is in such individuals especially that secondary infection takes place. The susceptibility to secondary infection is increased by debilitating disease and exposure to cold with the resulting vaso-constriction.

The mechanism of the secondary infection is usually hematogenous by direct bacterial metastasis from the primary focus through the blood stream. Lymphogenous infection is usually limited to direct extension from the primary focus to the adjacent lymph nodes, where a secondary reservoir of infection may be established. The possibility of the influence of exo-and endo-bacterial toxins is also mentioned by Billings, and the possible importance of sensitization of the tissues from the primary focus is likewise briefly discussed, but dismissed as a subject for further investigation. The local reaction in remote lesions secondary to a primary focus is endothelial proliferations of the lining of the blood vessels with or without thrombosis; but resulting in blocking of the vessels with hemorrhage into the immediate tissues, positive chemotaxis with multiplication of the leucocytes and plasma cells, and in cases where the infecting organisms are of low virulence, fibrinoplastic exudate with connective tissue proliferation.

Secondary, or systemic disease from a primary focus may affect various tissues of the body. The usual acute diseases believed produced by focal infection are listed by Billings as acute rheumatic fever, endocarditis, myocarditis and pericarditis secondary to rheumatic fever, pancreatitis, chorea, systemic gonococcus infection, gonococcal arthritis, acute nephritis, cholecystitis, acute gastric and duodenal ulcer, erythema nodosum, acute osteomyelitis, and diseases of the eye, especially iridocyclitis and uveitis.

The evidence in favor of this concept of focal infection, as outlined by Billings and others, is as follows: *First,* small primary foci of infection are constantly found in association with these secondary systemic and focal diseases, and quite frequently there is no other cause such as syphilis, tuberculosis, etc., to account for the secondary disease. *Second,* there are evidences of transient bacteremias in individuals with small primary foci of disease and secondary systemic disease. Such are the recovery of streptococcus viridans from the blood stream of individuals with early endocarditis, the report by Rosenow[3] that in acute rheumatic fever the same streptococcus can be simultaneously isolated from the affected joint exudate and capsule, from the tonsils, alveolar processes of the teeth, and the circulating blood; and a similar report by Billings that in chronic endocarditis the streptococcus viridans can be simultaneously isolated from the alveolar process

of the teeth and the circulating blood. *Third,* the selective affinity of certain bacteria for certain tissues. This property Billings believed was fully established by the experimental work of Rosenow,[4] which indicated that organisms isolated from certain diseased organs or tissues of patients, when injected into animals, produced practically identical lesions in the corresponding tissues or organs of the experimental animal, with far greater frequency than was observed in the controls. This property of elective affinity, or tropism, might be produced or enhanced by cultivating the organisms on media containing the specific tissue. *Fourth,* the well known and recognized exacerbations of arthritis, myositis, or iridocyclitis that often followed early or radical surgery on the primary focus, this arguing strongly for a causal relationship between the two diseased areas. *Fifth,* the again well-known and recognized clinical improvement that so often occurs in the systemic or secondary disease when the primary focus is eradicated, which was assumed to indicate an end to the bombardment of the secondarily diseased tissue by transient bacteremias from the primary focus.

This theory offered a ready and plausible explanation for many of the problems of localized endogenous infections. When frank sepsis was not apparent, the manner in which such protected structures as the endocardium, the joints, and the uveal tract of the eye might become infected with bacteria had never been clear. If primary diseased foci such as the teeth, tonsils, genito-urinary tract, etc., which might obviously become infected from external sources, could produce a transient bacillemia and the bacilli thus introduced in the blood stream lodge in the endocardium, joints, eyes, etc., the etiology of infection of these tissues was clear. Thus the theory of focal infection offered a logical solution for the problem.

Like all new theories, this idea was immediately accepted by many without question, and there ensued a widespread and somewhat indiscriminate eradication of primary foci of infection as a therapeutic procedure for an almost infinite number of pathological conditions. The literature soon became filled with glowing reports of brilliant cures of various obscure diseases following the removal of the teeth, the tonsils, the drainage of the accessory nasal sinuses and such procedures. However, it soon became apparent to all, except the most rabid advocates of the doctrine of focal infection, that in many instances the sacrifice of the teeth, the removal of the tonsils, etc., was without any effect on the diseased condition for which the procedure had been undertaken, and the final condition of the patient was no better, but indeed often worse than before his submission to these various surgical ordeals. These unhappy results were boldly discounted by the focal infection advocates as due either to the spread of the primary focus beyond the bounds where it could be completely removed, or to the already firm establishment of the secondary focus.

Other observers and investigators, more critical and less credulous, questioned various points of the theory, and sought an explanation of several pertinent questions which could not be accepted on faith alone. The elective affinity of bacteria for specific tissues, and the question of transmutation of bacteria was immediately questioned by many bacteriologists and pathologists. It was likewise pointed out that primary foci of infection were very frequent and often multiple in many normal individuals, and that it was peculiar that the secondary disturbances in the joints, the endocardium, or the eye, should be caused by rather small foci in the teeth, or tonsils, and not from such massive infections as empyema or psoas abscess. Some means of determining if a demonstrable focus of infection was causally related to the secondary disease was therefore sought. To this end the primary focus was cultured and tests were made to determine if the affected individual was unduly sensitive to the specific organism isolated from the primary focus. The complement fixation and the agglutination reaction of the blood serum were employed to ascertain if there was any undue systemic reaction to the organisms cultured from the primary focus and, if so, what fraction of the general antigenic mosaic, the filtrates, exotoxins, or nucleoprotein of the bacterial body might be responsible for such reactions. These laboratory investigations were in the main futile, the general run of all normal and diseased individuals showing more or less reactivity to the organisms in the primary foci, to which they were constantly exposed.

However, despite these various objections and much negative laboratory investigation, in the decade following Billings' articles the doctrine of focal infection became firmly ingrained in American medical practice, and the search for primary foci of infection and their eradication when possible became

the generally accepted procedure in the treatment of many localized infections, especially endogenous diseases of the eye, for which there was no obvious explanation, such as syphilis. In 1928 the literature, including laboratory investigations, was summed up by Holman[5] in a critical review. While accepting a causal relationship in many instances between primary foci of infection and remote disease, he pointed out the extreme diagnostic acumen required to decide if any determined focus of infection was causally related to the secondary disease, and that efforts to develop procedure of any diagnostic accuracy to determine this had been fruitless. In reviewing the evidence in favor of a relationship between primary foci of infection and secondary disease, Holman pointed out there was some suggestive evidence in the studies of sensitivity to the organisms from the primary focus which might indicate an undue reaction to these bacteria. The dissemination of organisms from the tonsils and teeth was, to a large extent, due to local anatomical peculiarities. As a result of exogenous infections, such as cause the common cold, the crypts of the tonsils may close and ulcers form in the base of the crypts. The epithelium of the crypts differs from that of the tonsils proper, having papilli and an underlying rich network of capillaries.[6] This epithelium is destroyed in chronic tonsillitis, and pressure on the tonsils can force bacteria into circulation.[7] The constant periodic compression of the tonsils in the act of swallowing suggests that this must be the mechanism where bacteria from the tonsils gain access to the blood stream. In the case of the teeth, the thinness of the epithelium covering the gingival crevices, the occasional breaks in its surface, and imperfect junction make this a weak point, where bacteria gain access and produce pyorrhea alveolaris.[8] Periapical abscesses may arise secondary to either pyorrhea or from the root canal of infected teeth. The rich capillary circulation of the gums facilitates entry of the bacteria to the blood stream. The evidence in favor of the gastro-intestinal tract acting as a focus of infection was analyzed without any definite conclusions. Holman then reviewed the extensive literature on the relation of cholecystitis, pancreatitis, and nephritis to focal infection, and emphasized that in each instance the anatomical peculiarities play a large role in the localization of bacteria in these structures. Rheumatism and joint diseases present a most complex problem, and Holman says quite definitely that the extensive investigations on these subjects indicate that the fundamental basis of all these rheumatic manifestations is a condition of hypersensitiveness to numerous exciting causes. The influence of other factors, common colds, heat and cold, diet, vitamin deficiency, and fatigue in the production of focal infection was clearly indicated by many investigators on these subjects. However, the elective localization of bacteria, held by many as sufficient cause in itself to account for the localization of focal infection, was held by Holman not to have been confirmed. The weaknesses of Rosenow's experimental work were pointed out, and the extensive investigations on the subject reviewed. While Holman concedes that a general bacteriological adaptation to environment is universally accepted and cannot be denied, and while it is clearly proven that streptococci can cause certain lesions throughout the body, nevertheless, it is a fifty per cent chance whether any particular localization occurs with a "specific" or "non-specific" strain. Summing up the extremely extensive literature, Holman concludes that the doctrine of focal infection has changed from a theory to a definite principle of great importance in numerous diseases of man. The factors determining the localization of bacteria in any tissue are those which alter the nutrition of the cells of those tissues, particularly the endothelium of the capillaries. The factors determining the invasion of the bacteria from the primary focus are dependent largely on the local circulation about or in the focus, especially dilatation of the capillaries and sluggish circulation. However, when a focus of infection is discovered, and considered responsible for a diseased condition, it requires the highest type of diagnostic ability to prove this is true. The recovery of the patient is insufficient, for this may be due to the general tonic stimulus resulting from the removal of one cause of lowered systemic resistance. Failure to effect a cure is likewise insufficient evidence against the relationship of the primary focus to the disease, for the secondary disease is often so well established when the primary focus of infection is discovered that the damage already done is irreparable.

The case of focal infection, even with the conservative reservations of Holman, was, however, far from settled. The critics of the theory freely conceded that in the sense gonorrheal arthritis was related to gonorrhea, furuncles to septicemia, tetanus

to a localized infection with tetanus bacilli, the origin of such systemic diseases to primary foci of infection was well established; but the idea that various diseases of unknown origin are related to infections of the teeth, tonsils, and other such localized foci met with steadily increasing opposition. In 1940 the views of this opposition and the supporting evidence was ably summarized by Reimann and Havens in a well documented review.[9]

Reimann and Havens especially analyzed the evidence against infected teeth or tonsils being related to remote localized disease. The evidence against so-called "infected" teeth acting as a reservoir whence infection might be disseminated to remote tissues of the body was summarized as follows: *1.* The bacteriological studies of apically infected teeth are questionable on account of the technical difficulty of preventing contamination during extraction;[10] that even when bacteria are present there is usually no evidence of infection of the adjacent tissues, and the mere presence of bacteria does not mean they are pathogenic. *2.* The diagnosis of periapically infected teeth is usually made by roentgenological study. This may be fallacious, for many of the radiolucent areas about the roots of teeth are not caused by infection.[11] It is impossible to estimate the pathological significance of such abnormalities by roentgenographic studies alone, and radiolucent areas often disappear spontaneously if left alone.[12] *3.* The results of inoculation experiments with organisms isolated from infected teeth are all sharply in contradiction to Rosenow's experiments, and these views on elective localization, which form such a cornerstone for the focal infection theory should not only be disregarded but actively contradicted.[13] *4.* The reports of clinical improvement following extraction of teeth must be accepted guardedly. The improvement may be due to the shock reaction following extraction, and is often temporary. The actual evidence is against extraction of the so-called infected teeth benefiting arthritis. Thus Cecil[14] reported fifty-two arthritic patients with all teeth removed, forty-seven receiving no benefit from this dental assault, while three were made worse. Further, Reimann quotes Bauer's experience in a series of 300 arthritic patients, those with their teeth left alone doing better than those subjected to oral surgery. The existing clinical evidence does not indicate any causal relationship of infected teeth to either nephritis or rheumatic heart disease.[15] *5.* Far from being of benefit to the patient, the extraction of teeth may be positively dangerous, the bacteria being actually forced into the blood stream by the trauma of operation. Okell and Elliott's[16] bacteriological study of the circulating blood immediately after the extraction of teeth revealed streptococcus viridans in 75 per cent of such blood cultures. It is true, however, that such transient bacillemias are usually harmless. Further, lung abscesses may follow the extraction of teeth, due to the aspiration of infected blood or tissue particles, 12 per cent of a series of 227 lung abscesses being due to this cause.[17]

The evidence against the tonsils being related to such diseases as rheumatic fever, rheumatoid arthritis, colds, subacute bacterial endocarditis, nephritis, and a host of other conditions charged to their account is even more unconvincing. Barring repeated attacks of tonsillitis, or peritonsillar abscesses, for which, of course, tonsillectomy is indicated, there is no definite standard to judge whether or not tonsils are chronically infected. In a series of scholarly articles, in which he stressed the impossibility of sterilizing the mucous membranes of the throat, Bloomfield[18] emphasized the fact that bacteria normally grew not only on the mucous membranes but in their superficial layers, in the crevices between the epithelium and in the orifices of the small mucous glands. Long[19] studied 2,000 pairs of extirpated tonsils and rarely found abscesses. The streptococcus viridans, to which so much importance is attached by the advocates of focal infection, is a part of the normal bacterial flora in the mouths of healthy individuals.[20]

Although there are apparently many instances in which acute rheumatic fever follows an attack of acute tonsillitis, various clinical studies indicate that in from 25 to 90 per cent of cases of rheumatic fever there are preceding conditions other than tonsillitis or respiratory tract infections, and that in spite of the wholesale removal of tonsils over the past three decades the incidence of acute rheumatic fever is not lessened.[21] There have been numerous comparisons of the incidence of rheumatic fever and cardiac disease in children with their tonsils removed and those with their tonsils unremoved. There is no significant reduction in initial infection, recurrence or subsequent heart disease in the children who have had their tonsils removed,[22] and the num-

ber of recurrences of rheumatic fever has not been reduced by tonsillectomy.[23]

Rheumatoid arthritis appears to be no more affected by tonsillectomy than is acute rheumatic fever. Statistical studies show that regardless of the type of treatment used in rheumatoid arthritis, 25 per cent "recover", 50 per cent improve, and 25 per cent get worse. Pemberton's[24] study of 400 cases, in which he showed 46 per cent recovered without operative attack on the supposed foci of infection, while only 16 per cent recovered after operation, therefore does not lend much support to the advocates of tonsillectomy. Likewise, it was pointed out that children with rheumatoid arthritis rarely show other evidence of localized infection.

Further statistical evidence of the apparent harmlessness of the tonsils in children was presented in the study of Cunningham,[25] who in 14,000 students found no greater cardiac change in those with either normal or diseased tonsils, and those with their tonsils removed; of a British Commission[26] which investigated 30,000 school children, and found the incidence of colds, coughs, and sore throats did not differ in those with and without their tonsils; and of Ellis and Russell,[27] who studied 4,000 Basque refugee children from the Spanish War, of whom less than 2 per cent had their tonsils removed, and even among those with their tonsils as large as walnuts, found an incidence of cervical adenitis and otorrhea of only 0.4 per cent.

Finally, to illustrate how far the pendulum has swung away from the idea of focal infection from the teeth and tonsils, and their removal as a therapeutic procedure, may be cited the changed position of such a careful student as Cecil. In 1933[28] he wrote, "the keystone of the modern treatment of rheumatoid arthritis is the elimination of infected foci." In 1938, after prolonged study, in collaboration with Angevine,[14] he stated that in no instance was the course of the disease altered or the patient cured when supposed foci were removed. He now believes that focal infection plays a relatively unimportant role in the disease. Bloomfield, who always found great difficulty in assimilating the tenets of the focal infection doctrine,[29] regards the procedures of extraction of teeth and extirpation of the tonsils as a gesture or the remnant of a habit which enables one to do something in chronic cases in which there is actually so little to do.

Summing up the case for the opponents of the theory of focal infection, Reimann and Havens freely concede that teeth should be removed or treated when there is reasonable certainty there is infection or apical abscess and tonsils which are the site of repeated attacks of illness, should be removed. However, they maintain that the theory of focal infection has not been proven, that the infectious agents are unknown, that large groups of persons with tonsils present are no worse off than similar groups with their tonsils removed, that patients who have given up their teeth and tonsils in the hope of alleviating some systemic disease have often, if not usually, made the sacrifice in vain, that when beneficial effects are observed they can seldom be ascribed to the surgical procedure, that the rare beneficial effects are outweighed by the harmful effects, or no effect at all, and finally that many supposed primary foci of infection heal spontaneously after recovery from the systemic disease, or when the general health is improved by hygienic or dietary measures.

Thus today stands the case of focal infection. It is probably a conservative statement to say that before an audience of bacteriologists, pathologists and internists, the doctrine of focal infection stands on a shaky pedestal and clad in somewhat dilapidated raiment. Among ophthalmologists, however, the case is somewhat different. It is a matter of established routine in almost all American ophthalmological clinics, to make a search for foci of infection in the study of the etiology of uveal tract disease, and usually to recommend the removal of discovered foci, as far as possible, as a therapeutic procedure in the treatment. So far has this idea been ingrained that even before routine cataract or glaucoma operations on non-inflamed eyes, the removal of obviously infected teeth or tonsils has been advocated as a precautionary measure calculated to lessen the incidence of post-operative complications, the theory being that the trauma of operation may favor the localization in the eye of bacteria from a remote primary focus. True, here and there voices have been raised among thoughtful ophthalmologists questioning the blind acceptance of the theory of focal infection, and Verhoeff along such lines has stated, "Belief in focal infection must be taken like religion, on faith". In recent years the realization that many cases of uveal tract disease, which might formerly have been believed due to foci of infection, are in reality due to tuberculosis or other in-

fectious granulomata, has somewhat lessened the percentage of cases attributed to focal infection. Nevertheless, the doctrine of focal infection, correctly or incorrectly, occupies a strongly entrenched position in ophthalmology, and it should not be relegated to the unimportant status it enjoys among bacteriologists and internists, until the specific evidence for and against it has been carefully examined.

The ophthalmological literature bristles with reports, too numerous to list, of the dramatic recovery of patients with iritis, choroiditis, uveitis, and even optic neuritis of one type or another, following the removal of foci of infection, usually in the teeth, tonsils, or accessory nasal sinuses. In these patients there was present no other demonstrable systemic disease such as syphilis, tuberculosis, etc. In the cases of optic neuritis there was likewise no evidence of disseminated sclerosis or other conditions to which the ocular disease might be attributed. There can be no doubt of the accuracy of these observations for they have been a matter of common observation in the practice of the majority of ophthalmologists. However, it is also true that many cases of iritis and choroiditis of undetermined etiology recover spontaneously. It is likewise true that optic nerve disturbances occur often in disseminated sclerosis as the first evidences of the disease, and retrobulbar neuritis may subside and the patients enjoy long remissions before recurrences in the optic nerve and elsewhere reveal the true nature of the disorder. The healing of an eye lesion following removal of a remote infected focus can therefore be accepted only as suggestive evidence of a relationship between the ocular lesions and the infected focus. Nevertheless, this mass of clinical evidence, consisting of careful studies on the etiology of uveal tract disease and case reports illustrating the recovery of the diseased eye on removal of foci of infection, is so formidable that it is difficult to dismiss it lightly on the sole grounds that it is only suggestive evidence. It is necessary, therefore, in analyzing the theory of focal infection as it relates to ophthalmology, to examine carefully the clinical, experimental, bacteriological, and immunological evidence which may argue for or against this theory.

Many of the reports on the relationship of uveal tract disease to focal infection emphasize some special etiological factor. The following are typical examples. Benedict[30] reported fourteen cases believed to be caused by infections in the female pelvis, the usual organism being a green streptococcus. Kapuscinski[31] reported fifty-one cases of iridocyclitis caused by infections about the teeth, and healing after extraction of the diseased teeth. Mazal[32] reported cases due to infected teeth, sinusitis, and appendicitis. Zanettin[33] compared the incidence of the occurrence of foci of infection in non-infectious, inflammatory ocular diseases. In eighty-seven patients in the first category he found only 16 per cent incidence of foci of infection; in twenty-six patients in the second group, 57 per cent had infected tonsils; and in sixteen patients the organisms were cultured from the primary focus and in sixteen instances the organisms were found to be oculotrophic on animal inoculation. Wulkow[34] reported twenty-two cases of ocular disease of unclear etiology, of which thirteen healed and nine were improved after the extraction of infected teeth. Johansson[35] believed a latent phlebitis might often be the cause of iridocyclitis. Kuchler[36] emphasized the relationship between iritis and infected teeth. Havlik[37] studied 2,458 cases of routine tonsillectomy and found eye complications, chiefly iridocyclitis, in seven patients, in four of whom the condition cleared after the tonsillectomy. The importance of focal infection as a cause for optic neuritis and retrobulbar neuritis was emphasized by Trumbo[38] and Kapuscinski,[31] who reported twenty-seven such cases due to infected teeth, by Duggan and Chitnis[39] and by many others. These are all fair samples of the innumerable reports emphasizing the relationship between ocular disease and foci of infection. An especially interesting study was made by Enroth,[40] who studied the influence of the weather on ocular disease apparently due to foci of infection, and found that a great number of the cases of iritis occurred when there was a sharp climatic change, a finding in line with Billings' earlier idea that exposure to cold influenced the capillaries and predisposed to the outbreak of secondary infections.

The majority of the reports, as exemplified by those just cited, are open to the criticisms: 1. They do not give the complete material from which the cases reported are drawn. 2. They emphasize some one factor believed to be of importance, and do not give a comprehensive picture of possible etiology. 3. They do not allow deductions as to the relative importance of focal infection as compared to other possible etiological factors.

There are, however, several reports which meet these criticisms, four of which may be reviewed here because they illustrate the gradually changing opinion on the relative importance of tuberculosis and focal infection in ophthalmology. The first two of these are by Irons and Brown[41] and appeared in 1916 and 1923, in the early flush and full popularity of the focal infection theory. These reports have been widely quoted and have greatly influenced ophthalmological thought.

These studies each reported 100 cases of iritis studied completely, according to the ideas then prevalent, in the effort to determine the causes of the ocular inflammation. The results of these two studies are summarized in Table I.

TABLE I
SUMMARY OF IRONS AND BROWN'S STUDIES ON ETIOLOGY OF IRITIS, 1916 AND 1923

	Syphilis with or without focal infection	Tbc.	Focal Infections						
			Teeth	Tonsils	Gonococcal Infections	Sinuses	Other Infections	Combined Infections	Undetermined
1916	23	8	18	16	9	3	5	17	1
1923	15	0	9	37	1	1	4	24	9
TOTAL	38	8	27	53	10	4	9	41	10
Percentage	19%	4%	13.5%	26.5%	5%	2%	4.5%	20.5%	5%
			Total due to focal infection 144 cases, or 72%						

Thus in 200 cases of iritis, 19 per cent could be attributed to syphilis, 4 per cent to tuberculosis, 72 per cent to focal infection, while in 5 per cent the cause was undetermined. The low incidence of syphilis was undoubtedly due to the relatively high social stratum of the patients studied. The small number of cases attributed to tuberculosis is an accurate reflection of the then prevailing thought in America on the unimportance of tuberculosis as an etiological factor in uveal disease. Only outspoken cases of tuberculous iritis with evidences of active systemic tuberculosis were accounted as tuberculous. The outstanding feature of these studies is that 72 per cent of the 200 cases were definitely diagnosed as due to remote foci of infection, and in only 5 per cent was the cause of the iritis undetermined. A further follow-up study on 50 of these cases was reported by Irons and Brown in 1926.[42] Twenty-three of their patients had previous attacks of iritis, and twenty-seven had their first attack at the time they were first seen. Forty-three of these fifty patients had complete freedom from iritis for periods of from three to twelve years. In thirty-eight of these non-recurring patients, the original iritis had been attributed to foci of infection, which had been eradicated, in the other fourteen due to syphilis and tuberculosis, treated with anti-syphilitic therapy or tuberculin. In seven cases in which the iritis recurred, one was probably tuberculous, two were due to old gonococcal infection with arthritis, one to syphilis, two to foci of infection which had not been removed, while in the seventh case the cause was undetermined. It is scarcely a matter of wonder that this impressive evidence, from such careful students as Irons and Brown had the tremendous influence it did in ophthalmological thought.

The third report is by Irons in 1931.[43] In this paper he suggests there may be relative differences in the etiology of acute, recurrent, and chronic iritis. He defines chronic iritis as one of over three months' duration. He reports a small, carefully studied series of cases, in which 56 per cent of 26 cases showed evidence of tuberculosis, 15 per cent being probably due to tuberculosis.

The fourth report is from the Johns Hopkins Hospital[44] and is a survey of 562 patients with endogenous iritis or uveitis studied in the wards of the Wilmer Institute from 1926 to July 1, 1939, for the etiology of the ocular disease. Patients with uveitis admitted for some special diagnostic procedure and on whom the records were incomplete are not included. The material therefore consists of

patients in whom the uveal disease was so severe that hospital care was indicated, or who were admitted to the hospital, primarily for diagnostic study. The material may therefore be colored in that the uveal disease was more severe than the usual "run-of-the-mine" iritis or uveitis, and that it may include a number of suspected cases of tuberculosis uveitis referred for the reason ocular tuberculosis has been a subject of especial study in the Wilmer Institute. In all of these patients the diagnostic study comprised a complete history, general physical examination, clinical and radiologic examination of the teeth, nose and throat, gynecological or genito-urinary examination, routine laboratory examination of the blood and urine, Wassermann reactions and Mantoux intracutaneous tuberculin reactions. Roentgenological examinations of the gastro-intestinal tract and gall-bladder, bacteriological studies and such special tests as the Frei test were made when indicated. Roentgenographs of the chest were made in many instances prior to 1935 and routinely from 1935 to the end of the study. In the latter years gonococcus complement fixation reactions on the blood serum were routine. Serologic studies for Brucella infection and biopsy of lymph glands for sarcoid were not routine until 1939. This study is therefore of no value in reflecting the etiological importance of these diseases.

The patients in the study were divided into two groups. The first group consisted of 244 patients in whom the results of the diagnostic study and the therapeutic response to treatment were so clear that a definite diagnosis of the etiological factor responsible for the ocular disease appeared justified. These patients are shown in Table II. In 45, or 18.4 per cent, the uveal inflammation was due to syphilis; in 132, or 54.1 per cent, to tuberculosis; in 31, or 12.7 per cent, to foci of infection; in 10, or 4.1 per cent, to gonococcus infection; in 14, or 5.7 per cent, to acute systemic disease, and in 12, or 4.9 per cent, to miscellaneous conditions such as herpes, sarcoid, etc. The patients in which the uveitis were attributed to foci of infection had either apically infected teeth, infected tonsils, infection of the accessory nasal sinuses, or chronic non-specific infections in the genito-urinary tract. In these patients there appeared a causal relationship between the foci of infection and the ocular disease, and the therapeutic response to the eradication of the focus of infection seemed such as to justify this assumption.

The second group consisted of 318 patients in whom the diagnostic study revealed no evident clear-cut etiological factors to which the uveal inflammation could be attributed, and in whom only a presumptive diagnosis, therefore, appeared justified. Fourteen, or 4.4 per cent, of these patients had syphilis, but the occurrence and character of the uveal disease did not altogether fit in with the usual picture of ocular syphilis. In 147, or 46.2 per cent, the ocular inflammation was believed to be tuberculous in origin, but in these patients there was insufficient evidence to make other than a presumptive diagnosis. One hundred and sixteen patients, 36.5 per cent of this group, had definite foci of infection but in none of them was there any evidence the focus of infection was causally related to the ocular inflammation. In the greater number the foci of infection were operated and eradicated on account of the local condition, and in hopes such eradication might improve the general resistance and local eye disease of the patient. In none was the result sufficiently striking to suggest a relationship between the focus of infection and the uveal tract inflammation. These 116 patients may have been examples of a latent ocular tuberculosis, of obscure etiological factors that defied detection, or possibly examples of uveal disease secondary to foci of infection, but so firmly established that eradication of the foci was without effect on the ocular picture. In 16, or 5 per cent, there was some evi-

TABLE II (GUYTON AND WOODS)
ANALYSIS OF 244 CASES OF UVEITIS, WITH DEFINITE DIAGNOSIS OF ETIOLOGICAL FACTOR RESPONSIBLE

	Syphilis	Tuberculosis	Foci of Infection	Gonorrhea	Non-Granulomatous Systemic Disease	Miscellaneous, Herpes, Brucellosis, Sarcoid, etc.
Number of Cases	45	132	31	10	14	12
Percentage	18.4	54.1	12.7	4.1	5.7	4.9

TABLE III
ANALYSIS OF 318 CASES OF UVEITIS, WHERE ONLY PRESUMPTIVE DIAGNOSIS COULD BE MADE

	Syphilis	Tuberculosis	Foci of Infection	Gonorrhea	Non-Granulomatous Systemic Disease	Miscellaneous, Herpes, Brucellosis, Sarcoid, etc.
Number of Cases	14	147	116	16	19	6
Percentage	4.4%	46.2%	36.5%	5%	6.0%	1.9%

dence that gonorrhea might be the cause of the ocular disease, but the evidence was inconclusive. In the remaining 25 patients, 8 per cent of the entire group, there was no cause found to which the uveal inflammation could be attributed, and it was assumed that either the original cause had been some systemic infection which had passed and left the ocular disease as its only residuum, or that the actual cause was so obscure it lay beyond the ability of modern medical diagnostic procedures to detect it. The composite figures for both groups are shown in Table IV.

and foci of infection as causes of uveal disease, and the decline of the implicit belief in the doctrine of focal infection.

There is a moderate amount of experimental work dealing with the relationship of ocular disease and focal infection. Zanettin[45] cultured bacteria from supposed foci in the tonsils, teeth, or genito-urinary tracts in 19 patients with iritis and inoculated a large series of rabbits intravenously with these organisms. In 64 per cent of the inoculated animals a violent congestion of the iris occurred, the same phenomenon persisting in the second transfer.

TABLE IV
ANALYSIS OF 562 CASES OF UVEITIS, DEFINITE AND PRESUMPTIVE DIAGNOSIS OF ETIOLOGY

	Syphilis	Tuberculosis	Foci of Infection	Gonorrhea	Non-Granulomatous Systemic Disease	Miscellaneous
Number of Cases	59	279	147	26	33	18
Percentage	10.5%	49.7%	26.1%	4.6%	5.9%	3.2%

A summary of these four papers on the etiology of uveal disease is shown in Table V. The difference in importance attributed to focal infection and tuberculosis is striking. It is certainly more than can be explained either on the basis of the greater chronicity of the cases of uveitis, the differences in the material studied, the changes or amplification in diagnostic study between 1916 and 1940, the individual interpretation of different observers or the correlation of clinical-pathological material. It illustrates the change of opinion in the course of two decades on the relative importance of tuberculosis

Traut[46] cultured pleomorphic streptococci from the circulating blood of five patients with acute iritis, thus demonstrating a bacteremia might occur in the acute stages of the disease. Berens and his co-workers have published a series of studies dealing with the relationship of ocular disease to foci of infection. In the first report[47] they described studies indicating that a high agglutinin titer to an autogenous strain of streptococci cultivated from a focus of infection was strong presumptive evidence that the strain was related to ocular disease. In a second experiment[48] they injected rabbits intravenously with organisms

TABLE V
SUMMARY OF THE STUDIES OF IRONS AND BROWN, IRONS AND GUYTON AND WOODS, ON THE ETIOLOGY OF UVEAL DISEASE

Report	Syphilis	Tuberculosis	Focal Infection	Gonorrhea	Non-Granulomatous Systemic Disease	Miscellaneous and Undetermined
Irons & Brown 1916 and 1923	19%	4%	72%	—	—	5%
Irons 1931	8.9% (?)	15-56%	24-64%	—	—	—
Guyton and Woods 1940	10.5%	49.7%	26.1%	4.6%	5.9%	3.2%

isolated from the teeth and tonsils of patients with inflammatory ocular disease, and obtained an iritis in 44 per cent of 61 different strains, while in a control group of 69 stock strains of organisms, iritis occurred in only 29 per cent of the inoculated animals. In a third paper[49] they studied the ocular lesions resulting from single and multiple injections of various organisms, and found that iritis and microscopic lesions of the uveal tract might occur following the injection of relatively small doses of these organisms, especially of streptococci. Multiple doses were more efficacious than single doses. Few eye lesions, however, resulted from artificially implanted foci of infection, and there was no higher incidence of iritis in animals with a concurrent arthritis than in those with no demonstrable involvement of the joints. Chojnacki[50] isolated streptococci cultured from apical abscess in ten cases of iritis and four cases of axial optic neuritis, and inoculated these streptococci intravenously in rabbits. Twenty-four of thirty-eight such experimental rabbits developed ocular inflammation. Other experimental studies on the direct relation of foci of infection to inflammatory ocular disease are along these same lines, dealing in the main with the elective affinity of organisms isolated from the primary foci for the eyes, and the experimental production of ocular lesions in animals by the intravenous injection of such organisms.

It is obvious that while there is clinical and experimental evidence supporting the hypothesis that ocular disease may be caused by bacteria carried to the eye from remote foci of infection, such evidence is largely suggestive and circumstantial. It consists, first, in the indisputable fact that many cases of ocular disease are encountered in which there is no demonstrable systemic cause other than the presence of remote foci of infection; second, there are countless instances in which dramatic and prompt healing of the ocular disease has followed eradication of the primary focus; third, sudden transient exacerbations are occasionally observed after extraction of teeth or removal of tonsils and it is argued that these indicate a relationship between ocular disease and the focus of infection; fourth, there is some evidence that blood stream infection may be present in the early stages of the ocular disease; fifth, in experimental animals an iritis may be produced by the intravenous injection of organisms, especially streptococci; and, finally, there is some far-from-convincing evidence that some organisms may have a special predilection for ocular tissue.

Against each of these points, however, grave objection may be raised. Against the first point, that many cases of uveal disease are encountered for which no systemic cause can be found other than foci of infection, may be advanced the following fact: Foci of infection are present in many otherwise healthy people, and despite various reports to the contrary, they do not appear more frequently in patients with uveitis than in patients without uveitis. Hughes[51] studied the incidence of dental infection and sinus infection in a series of patients, most of whom had uncomplicated cataracts and none of whom had any evidence of uveal disease. This study was made at the Wilmer Institute under exactly the same conditions which governed the study made by Guyton and Woods in patients with uveitis. Guyton and Woods correlated these figures statistically to conform with the age distribution in decades for the patients with uveitis and compared the incidence of such foci of infection in the two groups. This comparison is shown in Table VI.

TABLE VI

INCIDENCE OF FOCI OF INFECTION IN 523 PATIENTS WITH UVEITIS AND 507 CATARACT PATIENTS WITHOUT UVEITIS (CORRECTED STATISTICALLY TO CONFORM WITH AGE DISTRIBUTION BY DECADES)

Type of Patient	No. of Patients	Foci of Infection	
		Dental Infection	Sinus Infection
Patients with uveitis	523	27.1%	12.4%
Patients with cataract	507	25.8%	13.0%

Thus in the 523 patients with uveitis the incidence of dental infections and sinus infections were respectively 21.1 per cent and 12.4 per cent and in the 507 patients with cataract the incidences were 25.8 per cent and 13 per cent. On the basis of these figures it is manifestly absurd to advance the argument that the mere finding of dental and upper respiratory tract infection in patients with uveitis is evidence of a causal relationship between the two. The fact that no other etiological factor can be found is at best only negative evidence.

In recent years American ophthalmologists have realized more and more the importance of tuberculosis and brucellosis as causes of ocular disease, and the difficulty in reaching an accurate diagnosis

in either of these is well known. Many of the cases of uveal disease formerly attributed to focal infection are probably instances of ocular tuberculosis, and the presence of infected tonsils, sinusitis, or periapically infected teeth only incidental and inconsequential findings. The following case history is typically in point.

M. L., age 34. Examined March 3, 1930. Inactive uveitis of right eye and phthisis bulbi of left eye. History of bilateral uveitis two years previously. Survey disclosed latent syphilis, chronic sinusitis, chronic tonsillitis, carious teeth with gingivitis, bronchitis, sub-acute pelvic inflammatory disease. Radiograph of chest showed non-tuberculous infiltration of lungs. Sensitive only to 0.1 mgm. of tuberculin. On May 25, 1932, left eye was removed as a lost sightless eye. Histological examination showed classical picture of tuberculous cyclitis.

Second, the argument that dramatic cures so often follow eradication of the foci of infection may be countered by the argument that such spontaneous cures frequently occur if nothing is done, and likewise in a great number of instances removal of all possible foci of infection leaves the unfortunate patient no better off as concerns his eyes than he was in the beginning. Stripped of tonsils and teeth, often the victim of colonic irrigations, abdominal and genito-urinary operations, the patient may finally be reduced to only those organs necessary for existence, while all the time his ocular disease progressed remorsely to blindness. That the incidence or recovery or improvement in ocular disease after eradication of foci of infection is not that indicated in many enthusiastic reports is evidenced from the report of Mata.[52] In a series of carefully studied inflammatory eye diseases believed due to dental infection, he found that extraction of the infected teeth and cleaning up of the oral infection resulted in healing of the eyes in 12.5 per cent. Further, the improvement in ocular lesions after eradication of the focus of infection may be relief from absorption of non-specific material from the infected focus and this improvement may be only temporary. Thus von Hofe[53] reported thirteen cases of inflammatory ocular disease, all of which cleared on removal of infected tonsils, or the cleaning up of oral sepsis. In ten of these, however, the improvement was only temporary, the eyes relapsing to their former condition. An essentially similar finding was reported by Guyton and Woods. In their series of patients in whom the uveitis appeared causally related to foci of infection, the foci were totally removed in 42 patients, partially removed in 11 patients and not removed at all in 21 patients. The incidence of recurrences in the three groups, over a period of observation from 3.8 to 4.2 years were respectively 33, 36 and 29 per cent. As early as 1933 Lourie,[54] after reviewing the evidence to date, concluded that

TABLE VII
EFFECT OF REMOVAL OF FOCI OF INFECTION ON RECURRENCES OF UVEITIS

Treatment of Foci of Infection	No. of Patients	Average period followed, years	Previous Attacks	Recurrences
Totally removed	42	4.5	55%	33%
Partially removed	11	3.8	73%	36%
Not removed	21	4.2	67%	29%

neither the present state of scientific knowledge or clinical observations justified the operative removal of the suspected foci for the purpose of alleviating ocular infections.

Third, the exacerbations of the ocular disease occasionally observed immediately following the eradication of a focus of infection are explained by advocates of the focal infection theory on the grounds of an activation of the eye lesion by the transient bacillemia which so often follows operative interference on an infected focus. This is, of course, possible, but it cannot be proven. It may be better explained either as a simple Swartzman phenomenon, the lighting up of an inflammatory focus through absorption of non-specific protein, or on the basis of allergic shock to specifically sensitized tissue.

Fourth, the finding of a transient bacillemia in the early stages of an inflammatory uveal disease, while it does occur, is an extremely infrequent occurrence, and Kolmer[55] has emphasized how rare positive cultures are obtained in the blood stream and the aqueous in cases of acute iritis, and, further, that the transient bacteremias which occur in infection of the teeth, tonsils and other structures, are quickly controlled by the bacteriostatic action of the blood. Further, it is remarkable, when one considers the large number of cases of streptococcus and staphylococcus septicemia, that secondary infection of the uveal tract so seldom occurs.

Fifth, while it is well known that iritis and uveal

tract infections may follow the intravenous injection of bacteria in animals, the claim of selective affinity of certain strains of organisms for ocular tissue is so flimsy that it has no place in court. Every investigator who has injected animals intravenously with living bacteria is quite well aware that occasionally, sometimes frequently, metastatic lesions occur in the eye. Primarily these lesions are purulent or give the picture of an enophthalmitis, and only occasionally simulate or suggest the clinical lesions of the iris and uveal tract attributed to focal infection. While lesions do occur in the eye, they likewise occur with equal frequency in diverse organs, the liver, kidneys, spleen, etc. The figures cited to indicate oculotropism are totally unconvincing. It is, of course, conceded that bacteria do develop a certain environmental preference, but there is vastly more experimental evidence against oculotropism and the elective affinity of bacteria than there is for these suppositions. Thus Bellavia[56] injected rabbits with cultures of organisms obtained from foci of infection in patients with ocular disease. While he observed slight ocular changes of short duration, it was not possible to reproduce the ocular affection of the donors in the experimental rabbits. Giani[57] studied the localization of various organisms in both normal and traumatized eyes after intravenous inoculation. Peculiarly enough, he found the highest incidence of ocular localization occurred with B. prodigiosus and a comparative low incidence of localization with various streptococci. There was no difference in localization in the normal and untraumatized eyes. Cusumano[58] passed organisms, streptococci and staphylococci, from eye to eye of different series of experimental rabbits, in the hopes of developing an elective affinity of the organisms for ocular tissue. When these organisms were later injected intravenously, lesions occurred throughout the body, in the eye, liver, joints, kidneys, and spleen, a slight preference for the eye being shown by streptococci cultivated in brain broth. Nothing suggesting specific organotropism was found, his results being in disagreement with those of Rosenow and his followers.

Scientific proof that ocular disease of unclear etiology may be caused by bacterial metastasis from remote foci of infection, the crux of the focal infection theory, appears woefully absent and an impartial judge is forced to agree with Verhoeff that believers in such direct bacterial metastasis must base their belief on faith alone. There is, however, a strong possibility that foci of infection may be related to remote disease, not by direct bacterial metastasis but through sensitization and intoxication of the secondarily affected tissues by bacterial proteins, or secondary metastatic products absorbed from a primary focus. This possibility has been the subject of much interesting and productive investigation.

As early as 1902 Menzer[59] observed that immunity might play a very important part in the production of certain arthritic conditions. In 1916 Billings mentioned the possible part anaphylaxis, or allergy, might play in the production of secondary metastatic foci from the primary focus, but dismissed it as an idea for further investigation. In 1928 Holman expressed his belief that the fundamental basis of many rheumatic disturbances was a hypersensitiveness to various exciting causes and cited the work of Boots and Swift,[60] indicating the arthritis of serum sickness was clearly an allergic phenomenon, and of Turnbull,[61] which indicated that in the absence of foci of infection food hypersensitiveness might be responsible for certain cases of arthritis. As early as 1914 Fuchs and Meller[62] produced an experimental iritis in animals by intraocular sensitization of eyes with human serum and intoxication by intravenous injection thirty-five days later, thus proving an allergic iritis was a possible experimental entity. The evidence that secondary eye inflammation may be related to hypersensitivity from absorption of toxins or bacterial products from a focus of infection begins with the work of Swift and Derrick[63] in 1928. These authors found that by proper inoculation with streptococci a specific bacterial hypersensitivity, quite like the tuberculin hypersensitivity in tuberculosis, could be produced in experimental animals, and that the eye participated in this hypersensitivity. Later contact of the sensitized eye with the specific bacterial antigen produced an inflammatory reaction. The ocular hypersensitivity was best produced by an implanted agar focus kept infected with streptococci for many months. Studying the sensitivity thus produced they found a period of greatly increased sensitivity or hypergy, when there occurred a maximum tissue response to a minimum stimulus. This reaction was further studied by Derrick, Hitchcock and Swift,[64] and by Schultz and Swift,[65] who showed that this state of hypersensitivity might be produced either

by an infected agar focus or repeated intracutaneous inoculations. Once produced it lasted at least up to the seventieth day, and there was no parallelism between the ocular and cutaneous sensitivity. Julianelle[66] studied the question, using pneumococci, and showed the nucleoprotein fraction of the bacterial body was responsible for this tissue hypersensitivity. Brown[67] varied this procedure somewhat by sensitizing the eyes by anterior chamber injection of various proteins, bacterial toxins, and killed bacteria. After a proper rest period the intravenous injection of the specific antigens to which the eye had been sensitized produced a serious iritis with pericorneal injection and dilatation of the iridic vessels. After the first attack quieted, repeated intravenous injection of the antigen produced further exacerbations, with exudates in the anterior chamber and posterior synechiae. Brown called attention to the fact that the clinical picture of the iritis thus produced by allergic methods closely resembled the type of recurrent serous or plastic iritis observed clinically, and was quite different from the purulent iritis, panophthalmitis, or endophthalmitis usually produced by the intravenous injection of living organisms.

These various experimental procedures employed to produce an allergic iritis are all open to the criticism that either at sensitization or intoxication there was some traumatism of the eye. However, in 1936, MacLean[68] succeeded in producing an iritis by sensitization of the eye through repeated intracutaneous inoculations of living organisms and intoxication by intravenous injection of the organism, a procedure which involved no traumatism of the eyes.

It is apparent that a quite reasonable experimental basis exists for the supposition that primary foci of infection may be related to secondary ocular inflammation through a mechanism of sensitization and intoxication from the primary focus. Indeed, if such an allergic basis is assumed it is not necessary to postulate that the primary source of sensitization and intoxication be a clinically infected focus of infection. It is quite within the realms of reason that all mucous membranes and even cutaneous surfaces, whether clinically infected or not, may act as potential portals of entry for bacteria into the blood stream. Clinical support of this theory, is, however, still lacking and the technical difficulties are so great that such evidence may be impossible to obtain. The chief of these difficulties is demonstrating a significant sensitivity to the products of ordinary pathogenic bacteria. Individuals are so constantly exposed to these organisms that more or less sensitivity is a routine finding. It is therefore impossible to attach much diagnostic significance to positive skin tests, or serologic reactions to common bacteria when autogenous organisms cultivated from a primary focus are used. It is likewise impossible at present to determine the local sensitivity of the diseased eye, which is, after all, the salient point. There is as yet no conclusive evidence that such findings as cutaneous reactivity or a high agglutinin titer against suspected organisms are of real diagnostic importance. All that can be said at this time is that experimental studies indicate such an allergic mechanism, for the production of ocular inflammation from a remote focus of infection is a possibility.

Should clinical ocular disease result from sensitization and intoxication of the eyes by material elaborated from a remote focus of infection, it would explain several of the clinical observations advanced as supporting evidence by the advocates of the focal infection theory. The clinical improvement which so often follows eradication of the suspected focus might be due to the removal of the source of intoxication. The exacerbations which occasionally follow the operative removal of the focus might be due to the sudden opening up of a large area for absorption of the responsible bacterial antigen. The exacerbations of the ocular disease which occasionally follow too large an injection of an autogenous vaccine might be a true focal reaction produced by an injection of antigen above the point of ocular reactivity. Not only would such an allergic mechanism explain the clinical observations which are supposed to indicate a relationship between ocular disease and a focus of infection, but it would also answer the various arguments against direct bacterial metastasis. Unfortunately, while there is a reasonable experimental basis for believing such a mechanism may exist, there is no proof of such in patients, nor does such proof appear likely to be immediately forthcoming.

Thus stands the theory of focal infection today as regards ophthalmology. It still remains one of the tenets of faith for many, if not the majority of American ophthalmologists. It must be candidly admitted that practically all the actual evidence in favor of the

theory as originally set forth and generally subscribed to is totally clinical, largely suggestive and circumstantial. If this theory continues to be accepted and followed in the clinical practice of opthalmology, such acceptance and practice must be largely on faith. However, it is assumed that there may be a cause and effect relationship between a primary focus of infection and ocular disease through such a mechanism as sensitization and intoxication of the diseased eye by bacterial products absorbed from the focus of infection. A fair experimental basis can be advanced for such an assumption, although clinical evidence is lacking.

From the practical viewpoint the wisest course in the treatment and diagnosis of endogenous ocular disease is to continue the search for foci of infection. When such foci are found, if they are believed sufficiently severe or capable of impairing the general health of the patient, they should be removed either for their own sake or to improve the general health and resistance of the patient. If there is anything in the clinical picture to suggest a relationship of the diseased focus with the ocular inflammation, such as the outbreak of the ocular disease coincident with a lighting up of the primary focus, an undue sensitivity of the patient to organisms isolated from the primary focus, or a flare-up of the ocular inflammation after injection of a vaccine prepared from the primary focus, then operative eradication is indicated whether one believes the ocular disease is caused by direct bacterial metastasis, by sensitization and intoxication by bacterial products, or by absorption of toxins from the primary focus. However, the routine removal of minor and symptomless foci of infection as a cure-all for endogenous ocular disease has no place in modern ophthalmology.

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INFECTIONS OF THE HAND*

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Infections of the hand are common to both the medical men and the surgeons. So many of us are prone to treat lightly abrasions, scratches or puncture wounds of the finger and hand, but we should remember that Insurance Companies and Industrial Boards estimate that ten per cent of all permanent disabilities result from infections of the hand, and out of this ten per cent, fifty or sixty per cent are the result of what was thought to be trivial wounds. A large proportion of infections of the hand begin as needle pricks, splinters of wood, scratches, or puncture wounds, and if we could get the laity to go to their doctor immediately after receiving a minor wound, more serious complications could be prevented.

*Read before the Southwestern Virginia Medical Society at Wytheville, April 23, 1942.

Contributing factors to hand infections are:

1. Failure of the patient to report to the doctor immediately after injury. Minor accidents are frequently infected.

2. In Industrial Plants, too much dependence is put in the first aid outfit and the emergency man. Many of these cases should be sent immediately to the surgeon.

3. The fellow employee often removes a splinter or foreign body with a dirty knife. Remedies commonly used by fellow employees are such as—placing chewed tobacco in the wound, washing out the wound with water, then applying a dirty rag or piece of waste.

4. The anemic, under-nourished individual is more prone to get infections, and poor home facilities contribute to these infections. Packers, porters, restaurant workers, dish washers, stenographers, clerks and office workers are more prone to hand infections than outside workers, such as carpenters, masons, railroaders, etc.

Let us take the simpler conditions first, namely, bone felons, and paronychia. Bone felons nearly always involve the terminal phalanx. Diagnosis of a felon: Redness, pain, tenderness and swelling of the pulp of the distal phalanx. The end of the finger is bulbous due to edema. The swelling and pain are more pronounced than that found in simpler inflammation.

The treatment is immediate incision. Errors are often made by failure to distinguish between an early lymphangitis and a true localization of the distal phalanx. Remember that a bone felon is well localized. The second error is waiting for fluctuation. Destruction of the connecting tissue takes place if incision is delayed. In general, one may say that when there is present a painful, tender distal phalanx with excessive edema limited to the phalanx, incision should be made. This incision should be made on the lateral side, not in the mid line. Some prefer a circular, fish mouth incision around the end of the finger, which does give a perfect drainage, but this leaves a tender scar which interferes with function. If the terminal phalanx is entirely loose, it is best to remove this.

Paronychia, or run arounds, begin at one side of the nail as a simple infection, frequently from a hang nail or manicure. First there is a localized swelling the size of a wheat germ which is actually a sub-epithelial abscess. If this is opened early, immediate recovery takes place. If neglected, this infection spreads around the side of the nail completing the run around. It will invade the base of the nail sulcus. Chronic infection may ensue, and once this takes place, the chronic infection may last for several weeks.

Treatment is to incise along the outer side of the nail, never incise through the mid line, as in so doing, we interfere with the nail bed and overlying epithelium, which might permanently cause a split nail. It is well to reflect the overlying epithelium and pack so as to allow free drainage.

Another frequent infection that we encounter is what is known as the collar button abscess. The location is nearly always at the distal edge of the palm, under the dermal and epidermal tissues. In working men, the epithelium becomes markedly hypertrophied, making a dense sheet under which the pus spreads. An infection present under the dermis passes through this layer to the epidermal tissue, and a second abscess forms, thus providing a dumb-bell shaped accumulation of pus.

Treatment is early incision, and it is important to open into both pockets. Don't be content to stop when you strike pus. Always examine carefully by inspection with a probe for a second pocket. If pus has extended into the space in the web, make a drain by through and through incision from the palmar to the dorsal surface.

Infections of the hand usually fall under three classes, namely, lymphangitis, teno-synovitis, and infection involving the major fascial spaces. It is necessary that the surgeon differentiate between these conditions as they are treated differently.

We will first discuss lymphangitis. Lymphangitis may be superficial or deep. There is a rapid increase of the swelling of the entire hand and forearm, with the greatest tenderness and swelling and redness on the dorsum. Red lines of lymphatic infection may be seen running up the arm, elbow and axilla. There is absence of pain on extension of fingers or thumb. This is important to remember. The fingers can be moved voluntarily without pain. There is absence of tenderness over the tendon sheathes of the mid-palmar and thenar spaces. There is absence of bulging in the palm. The patient often presents great prostration.

The superficial lymphangitis lacks the great swelling of the hand. First, the patient gives the history of an abrasion or injury of the hand. With-

in a short time he complains of headache, thirst, restlessness and fever. The lymphatics pursue the shortest course to the back of the hand. The lymphatics from the little and ring finger pass to the glands of the epitrochlea region at the elbow, those of the thumb and index finger course about the back and outerside of the forearm and wind their way to the axillary gland.

Treatment of lymphangitis is based on conservation and conservatism. The ill advised incision can do lots of harm. The position of masterful inactivity is most difficult to maintain, and yet the surgeon is constantly aware that his tendency to incise is due to his desire to do something rather than exact knowledge what to do. Therefore, we use local measures to wall off and overcome the infection. Until localization is present, use hot, moist dressings, rest and splinting of the hand and arm —and let me emphasize here, use voluminous dressing from the hand to the axilla. Do not stop at the elbow, even though the infection seems to be limited to the forearm. Carry the hot, moist dressings all the way to the axilla. No incision is to be made unless frank pus is present. It is well to start one of the sulfonamide drugs immediately because the streptococcus is more often the offending organism.

Teno-synovitis:—It is often difficult to differentiate between lymphangitis and teno-synovitis. More cardinal symptoms of teno-synovitis are as follows:

1. Exquisite tenderness over the course of the sheath and limited to the sheath—get this—limited to the sheath.

2. The finger nearly always assumes the position of flexion.

3. Marked pain on extending finger, most marked at the proximal end.

4. Symmetrical swelling of the entire finger.

The entire finger is uniformly swollen. The entire hand is slightly tender and the fingers are all slightly flexed. Extension may and often does extend along he sheath to the larger bursa and spaces. The most conspicuous and valuable sign in this diagnosis of teno-synovitis is the extension of marked tenderness of the area involved. It is well here to review the anatomy of these synovial sheaths of the finger. The synovial sheath of the index, middle, and ring finger begin just distal to the distal interphalangeal joints and extend into the palm, about one thumb's breadth proximal to the web, while that of the thumb and little finger extend the entire length of the hand, enlarging into a sac, and are known as the radial and ulna bursa respectively. These are often connected at the upper part of the hand, and this is an important surgical consideration. An infection of one might involve the other. The sheath of the thumb and little finger extends a thumb's breadth above the transverse carpal ligament at the wrist, so we can see that infections involving the little finger or the thumb have more potential danger than that of the index, middle or ring finger, and often infection will actually pass under the transverse carpal ligament at the wrist and involve the forearm.

The major fascial spaces of the hand: The three most important fascial spaces of the hand are the mid-palmar, thenar and hypothenar. The thenar and mid-palmar are by far the most important and most frequently involved. The infection of the sheath of the middle, ring and little fingers would involve the mid-palmar space, by simple extension, while the thenar space most likely becomes involved by extension along the sheath of the thumb and index finger. When the mid-palmar space is involved, we notice that a slight bulging of the palm is noticeable in spite of the palmar fascia. The swelling and exquisite tenderness is important; early before this swelling becomes marked, the tenderness is limited to the mid-palmar space. There is extension along the lumbrical canal so that swelling at the web of the fingers is prominent. The fingers are flexed. The relation of the swelling of the palm to that of the thenar area is of great surgical importance. With infection of the mid-palmar space, there is an associated swelling of the thenar space, but this is due to edema. When the thenar space is involved with pus, the swelling is out of all proportion to that of the palm if it is involved. The thenar space will look as if a balloon had been inserted and blown up to its full capacity. The thumb is pushed away from the hand. The edema of the back of the hand is always present and swelling is much greater than that of the palm, due to the loose tissue; however, the pus is always on the palmar side. Remember that edema gives rise to a soft pitting, while, if pus is present, induration can always be felt. If this point be remembered, embarrassing mistakes can be avoided. I want to emphasize this, that location of the greatest swelling does not indidcate the position of the pus. The

excessive swelling comes in the area where there is the largest amount of loose cellular tissue, namely, the dorsum of the hand. Almost always, the pus is on the palmar or flexor surface. Remember, too, that the point of tenderness is of marked importance in locating pus. The hypothenar space, the least important of the three, is separated from the remainder of the hand in that it is not involved secondarily to palmar infections. If the infection is in the mid-palmar space, pus may extend to the lumbrical canal, to the web, and possibly rupture into the thenar space. Abscesses involving the thenar space will ordinarily come to the surface on the dorsum, between the thumb and index finger, or may rupture into the mid-palmar space. An abscess involving the hypothenar space will ordinarily come to the surface upon the dorsum. Here again attention is called particularly to the rarity of abscesses upon the dorsum, even though the swelling is most marked in this area. An unnecessary incision is often made. In infections of the finger or the hand, it is very important to know the correct place to make the incision. In the fingers, the incision is best made on the lateral aspect, not in the midline, as this would leave a tender scar and would interfere with function. Make the incision adequate, too large rather than too small. If this infection has extended up the finger and involved the lumbrical spaces, carry the incision into the palm about one-fourth inch. Infection of the tendon sheath of the index finger usually passes to the lumbrical space on the outer side of the finger and may extend into the thenar space. If this be the case, carry the incision along the radial side of the metacarpal bone, the incision lying dorsal to the web, extending from the thumb to the base of the index finger. With infection involving the tendon sheath of the thumb on the flexor aspect, the surgeon should dissect down to the tendon and open the sheath and enlarge this incision into the dilated portion of the sheath, namely, the radial bursa in the thenar eminence. Do not confuse this with the involvment of the thenar space abscess, as the line of incision is different in that case. Remember, I am still speaking of involvement of tenosynovitis of the flexor surface of the thumb. This tendon is nearer the palm, while the mass of thenar muscles lies to the radial side of the incision. This incision is best carried to the lower border of the transverse carpal ligaments. Extension along the sheath of the little finger often extends to the dilated portion of the sheath which is known as the ulnar bursa. An incision here begins at the distal crease of the palm and extends to the radial side of the hypothenar eminence.

Let us consider the abscess involving the two main spaces of the hand, the mid-palmar and thenar space. The mid-palmar space—and keep in mind that this is most often involved by infection of the middle, ring and little finger—is best opened by making an incision along one of the lumbrical canals of the three fingers. Choose the canal already infected. The lumbrical canal of choice would be that between the middle and ring finger. Extend this incision one or one-half thumb's breadth into the palm.

For involvement into the thenar space, the incision is carried along the radial side of the index metacarpal, as pointed out above, being dorsal to the web, and with a small artery forceps one can thrust into the space. This incision leaves no tender scar on the palmar surface. Care should be exercised in not spreading the forceps beyond the middle of this metacarpal bone for fear that we would spread the infection to the mid-palmar space.

Post-operative care of infections of the hand: Immobilization of the hand is paramount. No surgeon would fail to immobilize a fractured leg or arm. Often one fails to remember that after an extensive injury to the soft part by trauma or infection, immobilization prevents pain and favors healing. If the finger is the only part that is involved, put this on a splint. If the hand is involved, put the entire hand on a splint. Put the hand to rest. It is ideal to put the hand up in a position of function while it is convalescing. If the hand is involved more than the finger, allow the fingers to have slight flexion and the hand extended in a cocked-up position. This is a position of rest.

Prophylactic treatment of injuries of the hand: Since a large portion of infections of the hand follow trivial injuries, for instance, if there should be a small puncture wound, or scratch, try to squeeze a drop of blood out of the wound and start hot applications. In traumatic wounds of the hand, soap and water should be used abundantly. Do not use a harsh antiseptic. A thorough debridement should be done. Shave the wound if there should be any hair about it. If the hand is greasy, use ether or

benzine for cleansing. If for any reason the condition of the patient is such that a thorough debridement cannot be done, that is, if he should be in a severe state of shock, the paramount consideration is to prevent infection. If bones should be fractured, these are reduced, but no plates or screws or foreign material are used. Remove any loose bone fragments, but those having attachment to periosteum or muscle, replace as accurately as possible and leave them alone. Fill the wound with sulfathiazole powder or sulfanilamide as you prefer, the former being the one of choice, and close without drainage; however, the wound should be closed loosely.

In cases of infection of the hand, general anesthesia is to be preferred. This enables the surgeon to examine the pocket more thoroughly, and without pain. If this is attempted under local anesthesia, he not only causes a great deal of discomfort to the patient but takes a chance of spreading the infection. The common habit of pressing or squeezing wounds is to be condemned. If the incision is adequate, the pus will drain out. By using pressure, one is likely to spread the infection and squeeze pus into other spaces.

First, decide whether to treat the hand conservatively or by incision. Hasty and ill advised incisions may do serious harm. It is better to err on the conservative side if in doubt. Many lives have been lost because of surgical incision in lymphangitis or streptococcic cutaneous or subcutaneous infections. Be sure to differentiate between lymphangitis and streptococcic cutaneous infections of the hand, or whether you are dealing with a tendon sheath infection. Again, if you are in doubt, use voluminous hot, moist compresses. Incising a streptococcic cutaneous infection only tends to spread same, whereas delay in opening a tenden sheath, if it be involved, promotes necrosis of the tendon. One word of caution in using hot compresses to the hand: remember that an infected hand is less sensitive than a normal one and there is danger of a burn if we depend upon the patient to tell when the dressing is too hot.

Let me emphasize again the importance of looking upon every minor or trivial wound of the finger or hand as a serious one, in that it has serious potentialities. Failure to recognize the type of infection you are dealing with may permanently incapacitate the patient from earning a living, or even worse, it might cost him his life.

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THE WAR AND ITS EFFECT UPON THE MENTAL HEALTH OF THE ARMED FORCES*

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It is significant that your conference should give consideration to the problem of mental health and the armed forces at such an opportune time. I propose to discuss some of the implications of social work to the war situation.

SOCIAL WORKER—PAST, PRESENT AND FUTURE

The social work in this country is being carried on to a very large extent by women who are between the ages of twenty-five and fifty. The younger group are not so far removed from the first World War but what they are familiar with the effects of that catastrophe upon the social life of this country during the past twenty-five years, while the older group have dealt intimately with families and individuals whose maladjustments were caused either directly or indirectly by the war.

We have now just embarked upon another one of those social cataclysms, the like of which man has never before experienced and the results of which are beyond the ability of man to prophesy. Yet, there seems to be a deep-seated conviction in the minds of those who are not prone to indulging in hysterical fears, pathological pessimism, and incapacitating morbidity that the human ingenuity which created this pandemic of death and destruction will eventually be directed toward more constructive goals and the objective for which we are

*Read before the joint session of the Mental Hygiene Society of Virginia and the Virginia Conference of Social Work at Richmond, April 24, 1942.

fighting, that is, a better organized world in which to live will be achieved.

INTELLIGENT EFFORT—MAXIMUM CONTRIBUTION

In the meantime, all of us who are engaged in the humanitarian professions and services, whether they be jobs involving great responsibility or the menial tasks of the humblest worker, must not only work, but work intelligently in order that our efforts may contribute their maximum to the common cause.

It is imperative that we profit insofar as it is possible from the experiences of the first World War. We cannot afford to repeat the many costly mistakes we made at that time nor should we fail to utilize such information as we acquired which had value.

NEUROSIS—THREE DIMENSIONS

The war neurosis is a three-dimensional problem. Its *length* can only be measured by time which extends from war to war. The casualties of the last war remain with us as a medical and social problem of gigantic proportions, and the effect of the present conflict is already bringing out evidences of nervous instability in the civilian population as well as in the armed forces. The *breadth* of the war casualties encompasses all the neurotic and psychopathic disabilities of civil life and may include practically every symptom in the whole category of medicine. *Height* can be appreciated if one studies the Annual Report of the Administrator of Veterans' Affairs. Here we find that 59 per cent of all patients being cared for in veterans' hospitals have neuropsychiatric disabilities, and while tuberculosis and general medical problems are declining, the neuropsychiatric cases are slowly increasing. The economic aspect of the problem is appalling when one considers the money spent on medical care, training, and compensation.

NEUROSIS RESISTANT TOWARD TREATMENT—THREE PHASES

The war neuroses begin early. They are long drawn out, difficult to treat, and tend to increase for at least a quarter of a century after the cessation of hostilities.

There are three definite points of attack on the war neuroses. First, in the selection of the men who are to enter military service; second, in helping maintain the morale and caring for the mental casualties during combat service; and, third, in aiding the soldier during the period of demobilization toward rehabilitation and readjustment to civil life.

The problem of the war neuroses might well be considered in the light of these three outstanding phases of the soldiers' military experience: (1) mobilization, (2) combat service, (3) demobilization.

The social worker is interested in all three of these phases of the soldier's career. Her most important contribution, however, must necessarily be made during the period when the army is being mobilized and later on when the soldiers will be called upon to make the adjustments to civil life luring and following demobilization. The question may well be asked in all seriousness which period presents the most complex and difficult problems in the soldier's experience—the transition from civilian life to that of a soldier, or the readjustments from military to civilian life?

Let us first consider some of the problems related to the job of mobilizing an army of several million men who must be physically and mentally fit for combat service.

The question of physical fitness of any given individual can be attacked directly and objectively. The physician is equipped with mechanical devices such as the stethoscope, ophthalmoscope, microscope, electrocardiogram, x-ray, laboratory apparatus, and a variety of techniques—all of which aid in determining whether or not the candidate for service falls within the normal range of physical fitness. Such problems as may arise to bother the physicians interested in this particular field are not our concern at the moment. Having rationalized the difficulties of eliminating the physically unfit from the army, let us turn for a moment to those handicaps and deficiencies, both actual and potential, that are fundamentally and predominantly mental in character. Here we have few instruments or mechanical devices which will aid us materially in making a decision as to the candidate's mental fitness for military service. We have relatively few of the standards which are recognized as guides in evaluating mental fitness. We are dependent to a very large degree upon our ability to interpret correctly from the mental examination, the history, and observation what we have a right to expect of the future behavior of the particular individual under observation.

The available information upon which our judgment must depend comes from two sources: 1. Knowledge of the individual's personality makeup—his intellectual ability. The manner of man he appears to be. 2. What is the record of the individual's adjustment to civil life? Has he demonstrated his ability to successfully cope with the stresses of life to which he had been subjected up to the time of the examination and what has been the nature of his experience?

We may take it for granted that every soldier will be subject to about the same physical stresses and mental strains during his military career. He must be considered a potentially front-line soldier. There is abundant first-hand information gathered from the last War as to just what a military career calls for.

The Selective Service Boards have to assume for practical purposes that the candidate is mentally sound unless he shows some evidence of emotional instability or mental inadequacy during the rapid-fire six-to-eight-minute examination by the psychiatrist or the man himself gives a history of nervous instability, perhaps having been under treatment in a mental hospital or by a private physician, or other information is presented to the Board relative to the candidate's fitness for military service. Any or all of the foregoing opportunities for detecting the neurotic or psychotic individual can be, and are, frequently missed. The failure to exclude the epileptics, schizoids, paranoids, and psychopaths, has many hazardous implications, as it allows them to embark upon an experience which is scattered with the shoals upon which these psychologically inadequate individuals are bound to become wrecked.

One need only visit the psychiatric wards of the camp hospitals, the naval hospitals, or any of the medical centers which have the facilities for observation and care of neuropsychiatric patients to witness the clinical evidence of those who were unwisely selected cases for military service. *What is the Answer?*

The Selective Service Boards should have a record of every individual of military age who has had treatment in either a public or private institution and the private practitioner should be called upon to acquaint these boards with the names of such individuals which are known to him to be unfit for military service.

Every effort should be made by the Selective Service Boards to utilize the various civilian organizations in obtaining social histories on those individuals who show any evidence of nervous instability or when there is reason to believe there has been a mental illness of any type. (The organization and development of such a plan should be under the direction, of course, of trained social workers.)

For every case that shows evidence of any mental disturbance after being inducted into service, a social history should be obtained during the period of observation.

Could every candidate for military service have a preliminary or probationary period before being inducted into the army or navy with the right to an honorable discharge if found not suited for medical reasons for military duty, the government would save millions of dollars for medical care, rehabilitation, and compensation, and thousands of individuals would be salvaged for useful civilian life.

Inadequate Examinations
Short-Sighted Policy

It is rather difficult to reconcile the rather superficial neuropsychiatric examinations which the prospective soldiers are being given at the present time, limited to six or eight minutes for each man, with the importance of these neuropsychiatric casualties both from a military and from an economic point of view. Recently, it was stated that adequate psychiatric examinations which would weed out the potential neuropsychiatric disabilities from the army would save the Government one-half billion dollars for every one million draftees. The director of the Veterans' Affairs has stated that every psychotic individual that breaks down in the army costs the Government thirty thousand dollars from the time of the onset of his disease until his death. If psychiatrists can be hired at the rate of fifteen dollars a day, it takes but a little mathematical reckoning to determine that if one psychiatrist picked out one potential psychotic every six years, he would save the Government his salary. With the aid of an adequate social service staff and at very little additional expense to the Government, the psychiatric examinations, as carried out at the present time, could be made infinitely more valuable.

Notwithstanding the fact that during the period

of mobilization of World War I the psychiatrist examined approximately three and one-half million men and rejected nearly seventy thousand, there remained so many potentially neurotic individuals in the army that went overseas that General Perishing wired the Surgeon General in July, 1918, as follows: "Prevalence of mental disorders in replacement troops recently received suggests urgent importance of intensive efforts in eliminating mentally unfit from organizations of new draft prior to departure from the United States."

Social Workers' Contribution

There is no doubt that had the Selective Service Boards been in a position to utilize to the fullest extent the services of the civilian social organizations that are scattered throughout the length and breadth of this country in obtaining a social history on even those cases that must have been looked upon with suspicion, hundreds of psychopaths and neurotics would have been rejected. There is an obvious need for the Selective Service Boards and the Army Induction Stations and the camp hospitals where men are being held in psychiatric wards for observation to have, as an integral part of their plan of investigation, the facilities that might be utilized through a well-organized social service set-up for contacting the various civilian agencies throughout the country that could furnish adequate social histories for the physicians who are responsible for passing on these cases. Such investigations would represent one of the most important contributions in the effort to determine the mental fitness of the man for the army and would be of invaluable assistance in weeding out those potentially unstable individuals who are likely to break down under the stresses and strains of army life. This should be the social worker's real contribution in this present-day crisis, a service for which she is eminently well trained and qualified to render and a responsibility which she should assume in order that the Government, community, and individual might profit before it is too late.

Demoblization

What I have said about the period of mobilization and the social workers' contribution during this period is fairly obvious and generally accepted by those who are familiar with the neuropsychiatric problems of the last War. What I am about to say with reference to the period of demobilization is less well recognized and may be considered of merely academic interest, but I assure you there will be no problems with which this country will have to deal following the war that will cause us more concern or will be more significant to the welfare of the soldier than those that occur during the following demobilization.

Transition from Soldier to Civilian. The period of transition from military life back to that of the civilian is perhaps the most trying that many soldiers have to experience, whether the soldier be sick, well, or convalescing; this period of transition has its moments for most men that call for the same kind of courage and stamina as did the battle fields and other arenas of active service. This period is fraught with many disappointments and disillusionments. The glamour, glory, and excitement of the soldier's life with its continuous changes of scene and the comradeship of his fellow soldiers is no longer present. There is a dull emptiness to life and it becomes oppressive. There seems to be a sense of the futility of effort and to many nothing seems worthwhile. It is during this phase of readjustment that the soldier feels that he is the forgotten man. He is apt to become introspective and filled with self-pity and he is somewhat dismayed that he counts for so little. This is a state of mind which cannot be overlooked or treated lightly. It is the soil upon which so many of the chronic incapacities develop. Any plan of rehabilitation which involves the independence and the happiness, not only of the soldier, but also his family, cannot be taken too seriously. The wisdom, the foresight, and the efficiency with which the problems of this transition period are carried out must of necessity be reflected in the future stability of hundreds of men and families for years to come.

It is an extremely difficult task during this period of transition for us who are responsible for rehabilitating the soldier to strike a nice balance, to have a sympathetic understanding and a kindly consideration for the individual soldier on the one hand, and still not become unduly influenced by our sympathies so that we disregard fundamental and important factors relating to a successful social and economic rehabilitation of the individual. There is grave danger of jeopardizing any plan of rehabilitation by assuming an unduly sympathetic, over-solicitous, paternalistic attitude toward the patient. There already exists a tendency toward intro-

spection, self-pity, with fears and anxieties which creates a distorted idea of the gravity of the situation which he is facing.

Our first and most important duty is to prevent the incapacitated soldier from becoming disgruntled. Every effort must be directed towards convincing him that the Government, medical officers, reconstruction and social workers are interested in his welfare. He must be impressed with the fact that this interest extends not only to himself but to those who are dependent upon him. Not only are we thinking of his present situation, but his future happiness and efficiency. He must not be allowed to entertain the idea that the object of his treatment and training is simply to save money for the Government. On the contrary, he should be helped to understand that his Government can make no greater contribution to his welfare than that of returning him to the community in a state of mental and physical fitness that will permit him to assume efficiently the responsibilities and obligations which he gave up on entering the service.

Consider for the moment the situation as it exists between the soldier and the public as he embarks upon his military career and at the time of his discharge from service. The public, press and the politicians are little concerned about the men who are rejected or accepted for military service. Already nearly a million of the two million men examined by the Selective Service Boards have failed to qualify for general military service, and except from those interested in the medical aspects of the problem, we hear little about it.

Occasionally a howl goes up when some important public figure, such as a baseball player, is deferred from active service or perhaps a politician's son eases his way out on some pretext or other, but, on the whole, the Selective Service Boards are permitted to carry on their work unhampered by political influence or public criticism. This is, of course, as it should be, but quite different, however, is the awakened public interest during the period of rehabilitation. The ex-soldier's medical treatment, training, and compensation are questions of vital importance to every selectman, county commissioner, state official, Congressman, or whoever else may get the ear of a Government official that might help out his particular constituent in getting whatever the politician thinks may be available, regardless of whether it is good or bad for the soldier. One might think from the interest which these influential gentlemen took during the last World War in getting compensation for their constituents (most of whom they knew nothing about personally) that they were making it a full-time job to see that each and every man who had any connection with the military service could retire for life on a pension.

Not only was the problem of rehabilitation in the true sense of the word interrupted and at times prevented by unwise and unjudicious measures relating to compensation by certain groups, but the same lack of wisdom prevailed after the last War in relation to pressures brought about by various groups in pressing claims for vocational training. It is not the vocational training to which one would object, but rather the idea of placing a large number of individuals in the type of training to which they are obviously unsuited, subjecting them to a vocational experience where failure was inevitable. There was a striking evidence of failure on the part of those in charge of this particular governmental activity to appreciate the gulf that lay between the individual's ambitions and his ability. Encouraging a man to take up some particular vocation because there happened to be an opportunity for training in that field was another mistake—failing to recognize certain fundamental inaptitudes on the part of the prospective trainee to successfully acquire skill in that particular field.

It cannot be said that the plan of vocational guidance and training as carried out after the first World War had much to recommend it. It was characterized by failure, disappointment, a waste of time, effort, and money, and all too frequently resulted in irreparable damage to the man himself.

Compensation, hospitalization, or training cannot restore the soldier to his pre-war usefulness unless we can instill in him what we may call the "will to recover," unless we can create within the individual himself a willingness to forego the benefits derived from the incapacity. The motivating force which operates in prolonging the incapacity is invariably quite unconscious to the patient. It is for this reason that it is difficult to deal with. It should be recognized by those in charge of the whole problem of rehabilitation that illness is frequently an escape from those life situations which we are not well adapted to meet. It represents a solution to the conflict between the desire on the part of the individual to live up

to certain fundamental standards which he has accepted for himself and which had become a part of his personality make-up on the one hand, and the urge to evade and avoid unpleasant responsibilities on the other. In accepting illness as a compromise, the individual preserves his own self-esteem and it is quite obvious that when these unconscious motivations become artificially weighted by such factors as compensation, it makes the medical restoration of the patient in many instances secondary. In other words, the task of facing the situation frankly, objectively, and from an intellectual point of view becomes extremely difficult. In brief, when men are paid for being ill and penalized for getting well, the physician has little to contribute. This does not mean that compensation as such does not have a just and useful part to play in the rehabilitation of the ex-soldier. It does imply, however, that it must be used with nice judgment and only after every other aspect of the whole problem of rehabilitation has been carefully studied and evaluated.

Hospitalization is, of course, essential in dealing with the frankly mentally sick individuals—the so-called psychotics—but I must mention in passing the lack of wisdom that was displayed during the last war in the hospitalization of hundreds of psychoneurotics which resulted in prolonging their period of invalidism, not only at the expense of the Government, but to the detriment of the patient. Except for a period for study and observation, the psychoneurotics should be treated in out-patient clinics where adequate psychotherapy and well-supervised social service can be provided, not only for the welfare of the patient, but for the family as well. This is the only rational method of restoring the mentally handicapped ex-soldier to a life of efficiency. Such are some of the problems which will be of vital concern to the psychiatrist and social worker at some future date and for which we should be prepared to make a contribution. There is a grave danger that this period of demobilization and rehabilitation may produce more neuropsychiatric casualties than the theatres of combat service.

One cannot leave a discussion of the mental health of the armed forces without saying a few words about the effect of the war upon the various members of the families of these men. The home will necessarily undergo many changes during the war period which will be of particular interest to the social worker and some of the threats and dislocations of the family life well may affect those in combat service.

For the first time, the American soldier will have reason to be concerned about those he has left behind and this will represent an anxiety which will have to be dealt with as an additional stress which will tend to increase the soldier's emotional instability.

Fathers and older brothers in many instances will be leaving home for service, turning over responsibilities to be taken on by the younger members of the family—both boys and girls. This will hasten the growing-up processes and the adolescent period, as we think of it in social and psychological terms, will be materially shortened. Children will be emancipating themselves from the emotional dependence upon their parents at a much earlier date, aided and abetted by the fact that many of the younger adolescents will also be establishing an economic independence which they never anticipated having at such an early age. Under such existing conditions, the adolescent will no longer find it necessary to ask parents for his allowance, ordinarily limited to fifty cents or a dollar a week. They will be cashing their own checks as a result of their employment in some industrial plant, and, consequently, they will be less disposed to report in and out, less willing to be guided and directed in their private affairs by parents. With these added responsibilities will come a demand for more privileges and greater freedom. It will not be easy for parents to make the adjustment to these independent emancipated youngsters. Under this new and somewhat trying social and economic situation, it will be the obligation of society to provide for civilian youth, particularly those employed in industry, safeguards from the highly commercialized degrading amusements that are already springing up to lure these unsophisticated spenders. We need something comparable to that which the U.S.O. is doing for the men in service for our youthful civilian population. We must keep in mind that the wives, sisters, daughters, and sons of the men in service are indeed worthy of every consideration which wise social planning can provide.

INCREASE IN JUVENILE DELINQUENCY

There is considerable evidence from the English reports as well as our own observation that juvenile

delinquency is becoming more prevalent and it is a noticeable feature that a larger number of the more serious crimes are being committed by a younger group of offenders. It seems as though the 14-16 year old group of delinquents are carrying on with the anti-social activities that had previously been committed by those offenders a year or two older. When we take into consideration the fact that age 19 predominated in the frequency of arrests in 1941 and that the same year age 18 was second in frequency, it is with considerable trepidation that we anticipate the indirect effects of the war situation on delinquency.

I am sure that many of these social problems which cannot but affect indirectly the emotional stability of the men in service will be discussed by other speakers. I bring them up at this time only to point out the significance and the broad implications of some of the dislocations in our social and economic existence due to emergency situations which social workers should be called upon to deal with as time goes on.

However, I am not sufficiently well endowed with optimism to entertain any strong conviction that either the social workers or the psychiatrists will be sought out by those in authority in any large numbers either to contribute in the process of building up an army for active service or assisting in the return of that army to civilian life after hostilities subside, or to deal with the increasing number of social problems that will take place in civilian life; but we do know from past experience that the social worker will assume an important part in the final plans of rehabilitation. It matters not whether the social maladjustments be the result of physical damage brought about by combat service, psychological traumas, or upheavals in our social and economic way of life. To a very large extent the problem will be that of helping the individual to resume his place in society as happily and as efficiently as the residual incapacities will permit. It, therefore, behooves all of us to give these matters serious thought and consideration and, insofar as it is possible, to prepare a plan of action and outline certain procedures based upon our past experiences which will safeguard the future interests of the ex-service man.

The social worker has a real contribution to make to this present emergency situation—something that is vital and fundamental to the welfare of the soldier and the country. I have no misgivings as to her ability to measure up to the task with which she will be confronted and to carry on the high standards and traditions of her profession when the opportunity for service is presented.

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HYDATIDIFORM MOLE

A Report of Six Cases*

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Hydatidiform mole, also known as cystic degeneration of the chorion, vesicular mole, or myxometous chorion, is a cystic degeneration of the chorionic villi.

The etiology of hydatid mole is not known. Evidence seems to point to its being a true teratomatous phenomenon, the changes taking place in the embryonal envelope rather than in the embryo itself.

A true estimate of the frequency is impossible, because so many occur outside of hospitals and are either undiagnosed or not reported. It is generally conceded, from reviews of large series, that hydatid mole occurs approximately once in every 2,000 cases of pregnancy, and it is limited to the child bearing age. Color and race are not significant factors. Parity seems of no importance since mole occurs in primipara as well as in multipara. It occurs most frequently during the early months of pregnancy and is often associated with, or seen in, patients who have chronic nephritis.

There have been six cases of hydatidiform mole treated on the ward obstetrical service of the Medical College of Virginia Hospitals during a two-year period from July 1, 1939, to July 1, 1941. Three

*From the Obstetrical Department of the Medical College of Virginia Hospitals.

of these cases present some very interesting and unusual observations. The other three cases were all very similar in most respects. Only one of these last three cases will be presented since there was nothing unusual about any one of them.

The first case was of particular interest because it was a rare type of benign penetrating hydatid mole, with spontaneous rupture of the uterus at the site of penetration into the uterine wall. This case was also of interest because the uterus was not enlarged out of proportion to the period of amenorrhea, but, on the contrary, was smaller than expected for the period of amenorrhea.

It is interesting to note that both the first and second cases to be presented were at first admitted to the medical service because of a severe toxemia and cardiac decompensation, thought to be associated with a beriberi type of heart. The diagnosis of pregnancy was not considered at the time of admission. This error in admission diagnosis was noted in other cases reported in the literature, and should probably be kept in mind in all patients with these findings.

In the second case, the size of the uterus increased with remarkable rapidity during her first week in the hospital.

The third case was of interest from a diagnostic standpoint.

First Case: M. L., a 37-year-old married colored multipara, was admitted to the surgical service of St. Philip Hospital on April 27, 1939. She gave a history of having had an abortion five months prior to admission, and of having bled intermittently, in moderate amounts, since that time. She was dyspneic and orthopneic on admission, and the admission diagnosis was broncho-pneumonia and tubo-ovarian abscess.

Laboratory studies revealed red blood cells 2,300,000; hemoglobin 28 per cent (Sahli); and white blood cells, 5,900. Urinalysis was negative except for one plus albumin in a catheterized specimen.

The patient was transferred to the medical service because of the pneumonia. After a short period of observation, it was thought that the dyspnea was due to cardiac decompensation associated with a beriberi type of heart. There was a moderate amount of nitrogen retention. She was digitalized, transfused, and showed remarkable improvement, but signed her release from the hospital and left before further studies could be made.

She was next seen on July 10, 1939, two months later, when she was admitted to the obstetrical service of St. Philip Hospital, with a diagnosis of ruptured ectopic pregnancy. At the time of this admission, she was in extreme shock. The abdomen was so distended and tense that no definite masses were detected. Pelvic examination, after her condition improved, revealed bulging into both fornices, with extreme tenderness. There was no external bleeding.

Laboratory studies revealed red blood cells 3,600,000; hemoglobin 58 per cent (Sahli); and white blood cells 18,250. A catheterized specimen of urine showed albumin two plus. The blood count, repeated two hours later, revealed hemoglobin 28 per cent and red blood cells 2,600,000.

A suitable donor was obtained, and after her condition improved with treatment for shock, she was taken to the operating room. She was operated upon under general anesthesia about two hours after admission, receiving a citrate blood transfusion during the operation.

At the time of the operation, a penetrating type of hydatidiform mole, with spontaneous rupture of the uterus, was found. There was a large amount of dark blood in the peritoneal cavity. The cervical stump, uterine wall, and right broad ligament were all invaded by the mole. A supra-cervical hysterectomy was done, and the abdomen closed as quickly as possible because of the critical condition of the patient. The blood pressure and pulse were imperceptible during the last half of the operation. She was transfused again four hours after the operation, given continuous nasal oxygen and various stimulants. She died about eighteen hours postoperative, without ever regaining consciousness.

Second Case: M. J., a 37-year-old married colored multipara, was admitted to the medical service of St. Philip Hospital on August 24, 1938, referred from the medical clinic of the out-patient department, because of elevated blood pressure, associated with marked edema of the lower extremities, dyspnea on exertion, and some menstrual disturbances. She had noticed the dyspnea and edema for one month. Her last normal menses had occurred three months previously, but she had "spotted" at intervals during this period of amenorrhea. Her last pregnancy was a normal spontaneous delivery of a full term, living child, three years prior to admission.

Her blood pressure was 185/95. The fundus was enlarged to the level of the umbilicus. There was

extreme edema of both lower extremities. Red blood cells 2,500,000 and hemoglobin 55 per cent (Sahli). The admission impression was that the patient had a uterine pregnancy (five months), with an undetermined type of toxemia. It was later felt that she probably had some cardiac decompensation, with a beriberi type of heart, and a fairly severe anemia. She had been digitalized in the clinic and given mercuperin for the edema. The digitalis was continued in the hospital.

Her blood pressure remained around 180/100; the edema decreased some, but not entirely. After two weeks, the uterine mass had increased from the size of a five months pregnancy to the size of a term pregnancy. The Aschheim-Zondek test was positive. A flat X-ray film of the abdomen revealed no evidence of foetal skeletal outline.

She was operated upon on September 9, two weeks after admission to the hospital, at which time the uterus was found symmetrically enlarged to the size of a term pregnancy, and filled with hydatidiform mole. A supra-cervical hysterectomy was done, and a citrate blood transfusion given soon after operation.

The patient's postoperative course was uneventful, and she left the hospital on the fifteenth postoperative day. The blood pressure on discharge was 135/95, hemoglobin 79 per cent.

An Aschheim-Zondek test seven weeks postoperative was positive; another seven months postoperative was negative.

Third Case: J. M., a 25-year-old- married colored multipara, was admitted to the obstetrical service of St. Philip Hospital on November 6, 1939, referred from the Medical College of Virginia prenatal clinic, with a diagnosis of threatened late abortion (4 months), with associated or complicating hyperemesis gravidarum.

After observation, she was suspected of having a hydatid mole because of a combination of symptoms including excessive nausea and vomiting, anemia out of proportion to the amount of blood loss, mild abdominal cramps, moderate amount of intermittent vaginal bleeding, and some enlargement of the uterus. The nausea and vomiting had responded fairly well to treatment, but she continued to "spot" and bleed in small amounts, and complained of abdominal cramps. The uterus corresponded in size to the period of amenorrhea.

Eight days after admission, a spinal puncture was done and the spinal fluid used for an Aschheim-Zondek test, which was reported as negative. Two days later, the patient expelled spontaneously a mass of hydatidiform mole about the size of a grape-fruit.

She ran a low grade, septic fever for a few days after passing the mole. After this subsided, a dilatation and curettage was done, and only a small amount of tissue removed.

Following the curettage there was no vaginal bleeding, and she was discharged from the hospital one week postoperative, in good condition.

Aschheim-Zondek tests, one week and one month postoperative, were positive. Another test, eighteen weeks, postoperative, was negative.

Fourth Case: V. E. D., a 16-year-old married white primigravida, was admitted to the obstetrical service of Memorial Hospital on October 13, 1940, referred by a local physician because of vaginal bleeding and abdominal cramps. Last menstrual period July 17, 1940.

A brownish-bloody vaginal discharge was present for a month before admission to the hospital. Ten days before admission, she started having profuse bleeding from the vagina at intervals, without pain. A physician was called at that time and bed rest advised. The bleeding continued intermittently in small amounts until the morning before admission. At that time, the profuse bleeding started again, associated with severe pain through the lower abdomen.

At the time of admission to the hospital, she was complaining of fairly severe lower abdominal cramps and still bleeding profusely. Pituitrin 1cc. was given soon after admission (in emergency room) in an effort to check the bleeding. Temperature was 99, pulse 96, and respirations 20. The blood pressure was 120/60.

Examination was essentially negative except for the abdominal findings. The uterus was enlarged to the size of a four months pregnancy.

Laboratory studies revealed red blood cells 4,050,000; hemoglobin 73 per cent (Sahli); white blood cells 18,300. Urinalysis (catheterized) was negative. Wassermann was negative.

On the night of admission to the hospital, she passed a large mass of tissue which grossly resembled hydatid mole. A small amount of bleeding continued. Six days later (Oct. 19th), a dilatation and curettage was done under spinal anesthesia and a moderate amount of tissue was removed. A pelvic

examination done at the time of curettage showed the uterus to be twice normal size; adnexae were normal.

The pathology department reported that the tissue was hydatid mole with no evidence of malignancy.

Her postoperative course was afebrile and uneventful. On October 21st, the second postoperative day, a Friedman test on urine was strongly positive, but was negative on spinal fluid. Her blood count remained approximately the same, and the blood pressure remained normal during the entire hospital stay, a period of eleven days.

She was next seen in the obstetrical clinic of the out-patient department on October 29th, 5 days after leaving the hospital, at which time the examination was negative. There had been no further bleeding and she had no complaints.

An Aschheim-Zondek test on November 12th was weakly positive. A Friedman test on December 20, 1940, two months postoperative, and another on January 16, 1941, three months postoperative, were both negative.

She was last seen on April 9, 1941, approximately six months after passing the mole, and at that time her pelvic tissues were normal and she had no complaints. Her menses had been regular and normal in every respect.

Two other cases, similar to the fourth case reported above, were treated in a similar manner and discharged after repeated negative Aschheim-Zondek tests.

In *Summary*, it has been observed that:

1. The uterus is not always enlarged out of proportion to the period of amenorrhea in cases of hydatid mole, as some texts would lead one to believe. On the contrary, the uterus may be even smaller than expected for the period of amenorrhea.

2. Toxemia and beriberi type of heart, with some cardiac decompensation, is frequently seen in cases with hydatid mole. The electrocardiogram resembled that seen in patients with severe nutritional deficiency.

3. One should suspect hydatid mole in a patient who has a combination of excessive vomiting; "spotting" or bleeding; with mild, or moderately severe, lower abdominal cramps; with anemia out of proportion to blood loss; and regardless of whether or not the size of uterus corresponds with the period of amenorrhea.

4. One should not depend on one Aschheim-Zondek test. The spinal fluid Aschheim-Zondek test is not always positive in cases with mole.

5. These cases should be followed closely with Aschheim-Zondek or Friedman pregnancy tests at intervals after removal of the mole to rule out the possibility of chorio-epithelioma.

6. An unusual case of benign penetrating mole with spontaneous rupture of uterus has been reported.

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RECENT MORTALITY FROM MALARIA IN THE UNITED STATES*

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In the VIRGINIA MEDICAL MONTHLY for June, 1939, was published a paper by me presenting the statistics of the mortality from malaria in the United States from 1900 to and including the year 1937.

Beginning in 1900, the death rate for malaria in the census registration area of the United States was 7.9 per 100,000 population. Under the influence of vigorous antimalarial procedures then instituted the rate steadily declined to 3.9 in 1905. From that year to 1937, the rate fluctuated in cycles of a few years each (the "five-year cycles" of the malariologists) from 3.8 to a minimum of 1.9 in 1926, without much change in the general trend.

The statistics of malaria mortality for the subsequent years 1938, 1939, and 1940, now available, are, however, so markedly different from their previous course, and show such a significant and happy change in the trend, that a brief presentation of these recent figures may be of interest.

*Supplementary to paper published in the MONTHLY in June, 1939.

Briefly, the death rates from malaria in this country for the three years were as follows: 1938, 1.8; 1939, 1.3; 1940, 1.1. For purposes of comparison the annual mortality for the entire period 1930-1940 may be exhibited as follows:

Year	Death Rates per 100,000 of population	Numbers of Deaths
1930	2.9	----
1931	2.1	----
1932	2.1	----
1933	3.7	4,678
1934	3.6	4,520
1935	3.5	4,435
1936	3.1	3,943
1937	2.1	2,729
1938	1.8	2,378
1939	1.3	1,761
1940	1.1	1,442

These figures show that since 1937 there has been a sharp and continued decrease in mortality from malaria in the United States, to much the lowest rates on record, and to figures so much lower than any previous record and than any previous natural or cyclic fluctuation as to indicate that new conditions antagonistic to the disease have been established.

The great bulk of malaria deaths in the United States occurs in the Southern States, 97.0 per cent in 1933, 94.2 per cent in 1940, and the fluctuations in the annual death rates are due to the mortality in that section. In the Southern States taken by themselves the death rate from malaria in 1930, excluding Texas (complete statistics for which were not available until 1933), was 10.2 per 100,000 of population. In the same states in 1940, the rate was 3.4; or including Texas 3.3 per 100,000. This shows a decrease in southern malaria mortality in 1940 to one-third the rate that prevailed in 1930.

This recent marked and unprecedented reduction in the mortality from malaria in the United States, and especially in the Southern States, may be taken as an indication that new factors entered into the situation. The most obvious explanation of this decrease of malaria mortality that took place from 1937 to 1940, is that it was the result of the energetic and extensive antimalarial measures that were being carried out in the South. It is evidence of the success of those measures and of their value in the reduction and elimination of morbidity and mortality from an insidious and persistent disease which, unchecked, is one of the great scourges of mankind. Though there is much yet to be accomplished, the results already attained in this country can be regarded with felicitation and pride, and the possibilities for further progress and achievement are very promising and hopeful.

MEDICAL SERVICE TO THE SICK AND WOUNDED*

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When I received your invitation to address this memorial assemblage on this, another anniversary of the Armistice which ended World War I, I accepted gladly and with full appreciation that it is a distinct privilege to take part in a ceremonial which is an annual observance by this organization.

As a representative of the Office of The Surgeon General of the Army of the United States, I bring you his greetings and assured confidence that the medical profession will continue to meet the demands put upon it by the Armed Forces in the same hearty manner in which it has responded during the recent period of training, mobilization, and active participation in this World War II.

On this day and at this hour no doubt many of you who were in service during Warld War I, or who had relatives in the Armed Forces and who now have relatives or are yourselves members of the Armed Forces in this, another global conflict, turn your thoughts backward twenty-four years as I do to a November in France when, with the cessation of hostilities, we believed that our generation and succeeding ones would be spared the hardships and trials of another such struggle. Our thoughts on that November morning were happy ones. It is true

*Address at Armistice Day Exercises of Veterans' Association of Base Hospital No. 45.

there was a mingling of sadness for comrades who made the full sacrifice, but relief at what seemed to be the end of a bloody strife was combined with the hope that the sacrifice had not been made in vain.

Throughout the quarter century which has passed since that day many factors have combined to precipitate another and even more widespread World War into which we have inevitably been drawn. It is not for us to say that this strife could have been avoided or how it could have been avoided; it is only for us now to take our place on the battlefront of the Allied Nations and to carry through to a successful conclusion the conflict which shall decide the survival of civilization through many centuries to come. It is not given us now to debate; we have no choice but to go forward in the defense of Democracy and the freedoms under which we have been privileged to live in this country and in this hemisphere for 166 years. The scope of this War, with its new techniques of destruction, have drawn into the area of battle not only fighting men but civilian populations, including the aged, the crippled, young children, and women. For the first time in modern warfare the indescribable destruction of properties and the slaughter of non-combatants has become a planned part of the enemy's attack. The very nature of the conflict, therefore, has engaged every facility and the full energies of every individual in this hemisphere. We have seen and been a part of many activities of training and mobilization and now are actively at battle stations in far flung parts of the world, as well as here at home.

In this vast organization medical men and troops play a most vital part in guarding the health of the Army, the health of the industrial workers who support its efforts, and the health of the civilian populations. The military requirements for physicians is therefore a matter of concern not only to the medical profession but to the entire population. The task of meeting these requirements is, however, not new. During World War I, Base Hospital 45, sponsored by the Medical College of Virginia, was organized in July, 1917, and subsequently went out from this city to eventually serve with the American Expeditionary Forces over a period of more than nine months. Under the direction of Dr. Stuart McGuire, the doyen of surgery in the South, the laymen and physicians of Richmond who were concerned with the organization, financing and equipping of Base Hospital 45 took on their new duties and accomplished their missions in a manner which is an everlasting tribute to their adaptability and resourcefulness, and an enduring source of pride to this community. The temporary loss of the physicians and surgeons who left with Base Hospital 45 created a shortage of medical and surgical services which was of concern not only to Richmond but to the surrounding country as well. Now again, just as in the last war, the people of this city and area are faced with the grim realities of war, which include the problem of meeting both the military and civilian requirements for physicians. It therefore seems to me appropriate to discuss some pertinent phases of the manifold requirements of the medical profession in the present crisis. The problems in general may be discussed under three categories: (1) Production of physicians; (2) Procurement of physicians, and (3) Placement of physicians.

In considering the first point, namely production, it is easily recognized that this is of fundamental importance. Certain definite limitations imposed by the requirements for a medical education make it undesirable, if not impossible, to increase the number of physicians in too hurried a manner. The expanded requirement for physicians could not be met by accelerated educational programs alone, and standards at this time must be vigorously defended, being relinquished only under the gravest pressure of emergency. The difference between the present production of doctors in accredited medical schools of the United States and the loss of doctors by age retirement and for other causes shows an annual gain of from 1,500 to 1,800. Obviously, one cannot build up large numbers of replacements from such a small pool. However, the recent steps taken by many medical schools to accelerate curricula will give the same number of physicians at the end of three years that we formerly obtained in four.

Every effort has been made and is now being made to utilize the services of every available physician regardless of his age; the young men in Service, the over-age men and the physically unfit in industry and civilian practice. Even with the utilization of alien physicians and with the acceptance of graduates of non-accredited medical schools under modified regulations, the demand is still going to be far greater than the supply. This, I think, is one of our most pressing problems, and we must constantly be alert to maintain medical school stand-

ards as high as is possibly consistent with the requirements for an increased total number of physicians. To this end it should be recognized that medical school faculties must be maintained at a high level of efficiency, albeit they must replace most of their men under the age of forty-five. A corollary which I would emphasize, emphatically, is the necessity of making changes in medical school faculties slowly. Replacements must be made in such a way as to avoid confusion with resulting detriment to the entire program. By the same token, it is incumbent upon medical schools and teaching hospitals to make these changes as quickly as possible in the full realization that not only are readjustments vitally essential to the over-all program, but that it is much simpler and more effective to make them voluntarily than under duress and compulsion. It is my belief that the vast majority of medical schools and teaching hospitals have shown fine cooperation in this matter and I have great confidence that this state of mind and type of action will continue to be the rule when the stringent and rigorous military campaign of the future imposes more and more restrictions on them and demands even greater sacrifices on their part.

The second point—procurement—is one of even more pressing importance. Physicians in service, either in the Armed Forces or supporting the Armed Forces in industry and civilian practice, have a common goal—proper medical care. The magnitude of the task confronting the medical profession can only be appreciated when one pauses to consider the number of men in the Army and the demands for proper care of health among civilian and industrial workers. To those of you who have experienced military service the problem is more real than to those who have not. Yet changes which have occurred since the first World War are so great that the problem of furnishing medical care to troops is vastly different from what it was in former years. This is the outcome of mechanization of armies, which spreads battlefields over enormous spaces, and secondly, it is the result of dastardly attacks on civilian populations.

The problems of procuring, assigning, and transferring physicians to Army duties is the function of the Personnel Division of the Surgeon General's Office, albeit procurement has until recently been largely the function of the Procurement and Assignment agencies of the Federal Government as well as associated State units. This function of the Personnel Division must meet all demands and maintain a proper balance between internists, surgeons, and specialists in all fields of medicine. Doctors are a necessity. There are only a limited number available. These must be rationed, and those obtained by the Armed Forces must be assigned and reassigned according to varying essential needs. The crux of the present situation is the fact that assignment of physicians is an outstanding problem of the Armed Forces, and must always be decided according to military requirements. At times the assignment may seem to work to the disadvantage of an individual, but the good of the Service as a whole is more important than personal desires and advantages. It is impossible to assign every doctor to a position for which he is eminently qualified, or for which he considers himself qualified. Although inequities exist and always will be present, it is the belief of The Surgeon General's Office that a remarkably high level of accomplishment has been attained in this respect. It is necessary that all military establishments be so manned by medical personnel as to furnish each soldier with adequate care. For example, each tactical unit has a medical detachment, the largest of which is the medical battalion attached to a combat division. Here work is hard and filled with action of the sort which taxes to the utmost the training of the medical officer. The service he renders must be as good as the best, despite the fact that he frequently works under conditions which approach the impossible. Good medical officers recognize no impossibility.

A second line of medical units are the hospital units, which are of two kinds—fixed and mobile. Of the fixed hospitals, there are the named general hospitals located at certain permanent Army posts or at other appropriate places in Continental United States and in the several territories. Numbered station and general hospitals are activated at points of military needs, either in the Zone of Communication or the Zone of The Interior. Their function is to provide highly skilled specialists required for the treatment of the unusual cases which cannot be adequately cared for further forward.

Mobile units include numbered evacuation and field hospitals, hospital trains, and auxiliary teams. They vary in size from a small unit of twenty-five beds to the larger ones capable of caring for 1,000 or more patients. Their duties are arduous, and

their location in the zone of combat is frequently under fire, but facilities for adequate medical care are nevertheless maintained and must be continued, regardless of difficulties.

The morale of the Army depends in a large measure upon the type of medical care rendered to the wounded soldier, especially in the Zone of Advance. This factor alone makes the function of these units a matter of extreme importance. Since this war began, the Surgeon General's Office has authorized the formation of auxiliary surgical groups which start as a parent organization composed of teams of general surgeons and specialists. These teams are capable of doing all types of surgery, and they will be sent, either singly or in groups, to theatres of operations where they will care for the wounded, working either in mobile units or in installations of their own. This departure from custom and past procedure will unquestionably be the means of saving many lives and limbs, for in mechanized warfare with rapid troop movements, the necessity of bringing the surgeon to the patient has become more urgent than in any war of the past.

Now all these units must be furnished with personnel by The Surgeon General's Office and the various installations described must be adequately staffed through proper distribution of available physicians. When physicians decide to come into the Army, applications for commission are received at the Surgeon General's Office from two sources: (1) direct application for commission; (2) applications through Medical Recruiting Boards. This latter method of procurement, which was an acceleration and expansion of the voluntary program instituted earlier by the American Medical Association through its war-time committee and the Procurement and Assignment Agency, has supplied to the Service an adequate number of physicians to fill the needs of the Army up to January 1, 1943, under the present tables of organization. Indeed, in many States of the Union these Recruiting Boards have already been withdrawn because the estimated quota of physicians has been recruited for the Army. There are a number of States, however, in which the quota has not been met, and in some of the larger States there has been an unexplainable reluctance on the part of so many men to come into the Armed Forces that their quotas are not more than two-thirds filled at the present time.

Although the needs of the Army have been accomplished temporarily, it is still the function of Procurement and Assignment, with the assistance of recruiting teams, to obtain large numbers of physicians from many of the more populous States where the urban population is particularly concentrated. It has been agreed by The Surgeon General of the Army that active recruitment by Army teams will be held in abeyance until January 1, 1943, in the group of States whose quota is filled. Definitely the Army will need more doctors during 1943. Definitely the Army must have younger doctors and it is to be expected that this will be accomplished through further hearty cooperation of the Procurement and Assignment Service with the Army.

Perhaps it might be useful to deviate for a moment to discuss the question of rank and promotion. Any man who loses his desire to go forward is doomed. Therefore, the desire for promotion is a healthy one and should not be frowned upon, but rather encouraged as a sign of healthy interest in our work. With our rapidly expanding army, there must be many promotions and they can be given only to those who are on active duty. They must be earned by the merit of the individual, combined with a recommendation from his Unit Commander. Certain regulations control these changes, one being the requirement that each man must hold the last grade for a minimum period of six months. The man commissioned in June, 1942, is not eligible for promotion until January, 1943. In the October 10th issue of *The Journal of the American Medical Association*, a statement authorized by the Office of The Surgeon General relative to the recruitment of physicians for the Medical Department of the Army pointed out many important facts bearing on this particular problem. Physicians who volunteered in the training period in 1940 and 1941 must be promoted, other things being equal. Obviously, men coming in late should not expect preferment over men who have already spent one year or eighteen months in Service. Initial appointment in field grade is limited now because the percentage of men in field grade in the Medical Corps of the Army is slightly above that allocated to the line. Appointments in field grade are constantly being made for position vacancies, but they are being given to men over forty-five years of age, and in some instances over fifty-five years of age, who are to fill responsible positions such as Chiefs of services.

Let me emphasize again that active recruitment

must continue to keep pace with the needs of the Armed Forces. Young physicians are needed. In many cases they seem reluctant to enroll and I am regretful to say that in many communities older physicians have gone in advance of some of the younger members of our profession.

The questions of gravest importance to doctors under forty-five years of age are "What will happen to me in 1943?" "Will I be going into the Service?" These questions can only be answered by generalizations, but it is not too much to say that some facts are quite apparent, particularly to those who have watched the progress of procurement of physicians during the past six months and who have read the newspaper accounts of the increase in the size of the Army which is to continue through 1943 and even further. The new Army which we are building will need many more physicians. The natural deduction is that many thousand more will be called for during 1943. The exact number cannot be stated, but it is safe to predict that the vast majority of the physically qualified physicians under forty-five years of age will be serving in the Armed Forces before this war is over. The Office of The Surgeon General has at all times tried to work in close cooperation with the Manpower Commission. No physicians are called whose services are classified as essential to the community, either from the standpoint of a physician or a teacher. Medical schools must function in order that the future supply of physicians may be assured. There is no inclination to interfere with civilian medical care but, unquestionably, there must be some modification of medical practice, since the supply of physicians must be spread more thinly. It is impossible to increase materially the supply under present-day medical educational standards, albeit the accelerated curriculum system will, at the end of four years, produce about 5,000 more physicians than would have been produced under the old system. Cooperation of all elements is essential in this struggle. The needs of the Army come first, I believe, and the work of building the Medical Corps must continue. The production of physicians under present-day standards must go on as long as the present emergency permits. The urgency of our national crisis increases and will be felt more and more in the coming months. The needs of the Army will be harder and harder to meet, but they will be met in the future as they have been met in the past, courageously and fully. Of that every American is certain.

In anticipation of the desires of the Medical Profession of Richmond and as a token of his recognition of its brilliant performance in the last War, The Surgeon General, on March 11, 1940, invited the Medical College of Virginia to assume the responsibility of organizing the 45th General Hospital as an affiliated Medical Department Unit, thus reincarnating, and continuing the wartime tradition of, Base Hospital 45. The Unit was activated at Camp Lee, Virginia, on May 15, 1942, and officer and nurse personnel were ordered to that station for training.

The change from civilian to military life demands not only many personal adjustments, but necessitates the assumption of procurement, organizational, and innumerable other hitherto unaccustomed functions. Imaginativeness and the exercise of a high order of ingenuity is required in anticipating and meeting the exigencies which inevitably arise in the large scale professional service which the medical officers and nurses of General Hospital 45 will render. Fine judgment of personalities and careful estimation of abilities will be called for in delegating responsibility, and in assigning the manifold and arduous tasks which face them. Backed by a rich heritage, possessed of professional skill, and imbued with enthusiasm and a keen desire to serve, the staff of General Hospital 45 is prepared and ready to contribute its part in perpetuating the glorious annals of Virginia medicine and surgery.

MENTAL HYGIENE ACTIVITIES

During the meeting of the Southern Medical Association in Richmond from November 10th to 12th, there were a number of papers dealing with the problems of mental hygiene. Perhaps the large number of papers concerning direct questions of mental hygiene read in the various sections shows very admirably that doctors are beginning to think more and more in terms of the total personality of the individual rather than in terms of some specific disease. It is gratifying to see questions of mental hygiene incorporated in discussions of the different sections of an organization such as the Southern Medical Association. It seems that there is a growing tendency toward the belief that a healthy mental

attitude is necessary to bring about restoration of the patient suffering from some physical condition. In a General Clinical Session Dr. Thomas W. Murrell, of Richmond, gave a paper on *The Psychology of Acne*. Dr. Murrell's discussion brought out some very interesting mental hygiene facts. The biggest problem in relieving acne in children is the fact that the physician is not allowed to treat it. In spite of the fact that parents love their children and plan for their wholesome development they neglect this phase of the child's health because it is believed to be a transient and natural condition. This thought is probably tied up or based upon folklore and unscientific beliefs. Because acne is not treated properly it remains as an unsightly condition causing the boy and girl to withdraw from the social group. Thus an increasing seclusiveness probably accounts for the development of an inferiority complex in a large number of boys and girls during adolescence. Closely allied to this situation is the gang attitude which may later lead to juvenile delinquency.

In the Section on Neurology and Psychiatry Dr. Gregory Zilboorg, of New York, an invited guest, delivered an address on *The Actual Goal of Psychiatric Therapy*. Even though it is impossible to objectivize mental health, as it is physical health, we should not be discouraged nor should we be deterred from attempting to alleviate mental illness. Dr. Zilboorg showed very appropriately and very vividly that the form of government under which the individual lives may affect his mental health. Briefly he traced our present democratic form of government, as it is known today, from its primitive form when it consisted of the father as a dictator who ruled with an iron hand. This method of ruling naturally caused hatred of the dictator because there was at no time any opportunity for the expression of individual instinctual drives. This lack of opportunity for expression of strong impulses resulted in killing the dictator and jealousy amongst the sons. It is in this way that the lack of opportunity on the part of the individual to give expression to his feelings leads either to the development of a psychoneurosis, a psychosis or to criminality.

Again very beautifully Dr. Zilboorg brought out that in our present day democratic setup there is ample opportunity for the expression of these unwholesome impulses. Even during political campaigns, individuals are given to saying rather harsh things at times, but at least they are able to free themselves of their innermost feelings. Then after the campaign is over there is again unity of purpose in the government. For this reason it is not possible or even desirable to "lobotomize" or analyze a patient into a perfect state of conformity, but it is possible and desirable only to bring about in a particular patient the ability to live in conformity with the existing environmental circumstances. Inasmuch as mental illness is the result of a clash between instinctive impulses and environmental influences, we should try to bring about in the maladjusted individual a wholesome way of living in the social group.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was an eighteen-year-old white primipara who had adequate prenatal care from the second month of pregnancy. No abnormalities were noted during the prenatal period. She was delivered spontaneously in a hospital after an uneventful labor of eight hours. The postpartum course was uneventful and she was discharged from the hospital on the fifth postpartum day, returning to her home in an ambulance. She remained in bed at home until the tenth postpartum day, during which time she was seen by her physician. She was allowed out of bed at intervals from the tenth day on. She died suddenly on the fifteenth postpartum day immediately after having nursed the baby. Autopsy was not performed.

COMMENT

This has been classified by the committee as a nonpreventable obstetrical death. It may reasonably be assumed that death was due to pulmonary embolism, although no autopsy was done to confirm the diagnosis. There seem to have been no failures in the care and management of the patient, and it must be assumed that the death was, in the light of our present knowledge, unavoidable. This case also

illustrates as did the one reported in the JOURNAL last month, the minimal mortality, which will inevitably occur in association with pregnancy and confinement.

Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for October, 1942, compared with the same month in 1941, and for the period of January through October, 1942, compared with the same period in 1941, follows:

	Oct. 1942	Oct. 1941	Jan.-Oct. 1942	Jan.-Oct. 1941
Typhoid and Paratyphoid	38	87	223	268
Diarrhea and Dysentery	423	1,068	4,364	5,201
Measles	39	95	4,842	34,716
Scarlet Fever	291	141	1,163	1,157
Diphtheria	189	151	521	462
Poliomyelitis	7	33	40	117
Meningitis	14	3	140	92
Undulant Fever	3	3	28	12
Rocky Mountain Spotted Fever	3	0	45	31
Tularemia	1	3	33	25

POISON GAS INSTRUCTIONS

Despite the fortunate fact that in the present war poison gas has not been employed as a weapon, the possibility of its use has not been overlooked either by the military or civilian defense organizations of all nations throughout the world.

Through magazine and newspaper pictures, Americans are familiar with the gas mask issued to civilians and soldiers in the British Isles, and through the same sources, realize that the United States soldier is equipped with this protective device and is taught its use under simulated battle conditions.

Virginians, and indeed all Americans, likely will be spared the hazards of war gas on the home front. It is to be hoped devoutly that on the battlefields of Europe, Asia and Africa this cruel instrument of chemical warfare will continue to remain inactive. Nevertheless, no matter how remote this likelihood may be, the United States and State Offices of Civilians Defense wisely have set down a few basic rules for all citizens, should the unexpected occur in the United States.

On the theory that to be forewarned is to be forearmed, therefore, the following suggestions, carrying the approval of the State Office of Civilian Defense and the State Department of Health are offered:

If one has been exposed to war gas:

(a) Get out of the area and into a building. Before going inside, remove the outer clothing and shoes and leave them outside.

(b) Wash hands first, and then face, with soap and water.

(c) Irrigate or wash eyes at once with a large amount of a solution of baking soda (one teaspoonful baking soda to a glass of water). If no soda is available, use plain water.

(d) Take a shower or bath, using plenty of soap.

(e) Wash eyes again with baking soda solution.

If liquid gas gets on the skin:

(a) Use pieces of cloth or cleansing tissues to blot as much of the liquid as you can from your skin. Do not rub the skin as this will spread the liquid.

(b) To the contaminated areas of the skin, apply a household bleaching solution, such as Clorox, full strength. Do not, however, waste time looking for Clorox; bathe immediately with soap and water as directed above.

If your chest feels heavy, if you have trouble breathing, or if cigarette smoke becomes distasteful, lie down and remain quiet until a doctor sees you.

Keep as calm as possible. Follow the above instructions without wasting time. Seek medical attention as soon as possible. Permanent disability following injury by gas is uncommon.

Remember: Soldiers require gas masks because they must remain in the gas contaminated area. Civilians can get out of the gassed area.

By following the above relatively simple procedures, the layman frequently can prevent serious injury if he is exposed to a war gas. Prophylactic measures must be applied promptly to be effective. Exposure to most war gases does not render one helpless until several hours have elapsed.

It should be remembered that gas is the one weapon against which the layman can protect himself rather effectively. If he is struck by a high explosive bomb or burned by an incendiary, there is relatively little that he can do. If, however, he gets into an area contaminated by gas, by following

a few simple rules the severity of injury may be decreased.

General rules include:

1. A warning of gas will be given by the local air raid warden by a banging noise such as incessant hitting on a pan with a wooden stick or use of large wooden rattles. Some individuals will learn how to recognize the smell of different gases, but even if you do not recognize the exact type of gas, obey the general rules.

2. War gases are heavier than air and tend to stay close to the ground. If you are indoors, stay there. Close doors and windows, turn off air-conditioning, stop up fireplaces, and go to an upper floor; avoid basements and other low places. To get out of a gassed area, *walk, do not run,* against the wind.

3. War gases act on the eyes, skin or lungs. Prevention of injury depends largely upon prompt use of simple remedies which persons otherwise uninjured can apply to themselves.

Physicians can render a real service to their patients by making available to them the information given above. If it should become necessary for citizens to know what to do in the event of a gas attack, such knowledge will establish a genuine measure of protection for them.

In time of war, it is logical to prepare for any emergency, even if present circumstances and past performance make them appear extremely remote.

Miscellaneous

The Four Horsemen Ride Again.

War has once again loosed the Four Horsemen of the Apocalypse upon the world . . . fire, famine, sword, and pestilence. In the last war, the most deadly of these was pestilence, and today, in Europe and Asia, there is already an alarming increase in tuberculosis.

It is generally agreed in the medical profession that the prevention of disabling and fatal tuberculosis depends upon early diagnosis and prompt treatment. If this truth alone were generally known and applied by the whole population, tuberculosis could be kept to its steady retreat in spite of war.

During 1943, the tuberculosis educational campaign, which is supported by the Christmas Seal Sale, must be intensified if we are to keep tuberculosis under control.

The armed forces of the United States have taken a great step forward in preventing tuberculosis among their men by the routine chest X-ray and a recent report from the Canadian Army shows how valuable this type of examination has been.

Out of the 400,000 men examined preparatory to entering the Canadian Army between September, 1939, and March 1, 1942, a total of 3,969, or slightly less than one per cent, were rejected because of tuberculosis, according to a report by Lt. Col. W. R. Warner, R.C.A.M.C. The report states that only 114 cases of clinical tuberculosis have developed either in Canada or overseas in the entire Canadian Army as of March 1, 1942.

On the other hand, England and Wales admit their error in closing their tuberculosis hospitals during the siege of Britain and Dr. Percy Stocks, medical statistical officer, feels that this action must be held responsible for much of the increased mortality in the British Isles. Many of the patients died earlier than they might have done under continued hospital care and they inevitably spread the infection among their families. The decision to close tuberculosis hospitals has since been reversed, and a British report on this condition stated that "The only way an active case of tuberculosis will be gotten out of the hospital in England today is to be blown out with a bomb."

The increase in tuberculosis deaths in England and Wales has been 12 per cent since 1939 and 18 per cent in Scotland. The increase in deaths from tuberculous meningitis is 40 per cent in the first two and 50 per cent in Scotland.

It has been suggested that with the type of warfare, entailing mass evacuation, frequent visits to aid raid shelters and lack of adequate food and rest may account for the unprecedented rise in tuberculosis. No comparable advance was noted during the first two years of World War I.

Here in America the trend is upward in nineteen of our large industrial centers.

Health departments and volunteer tuberculosis associations are doing their best to meet this challenge, but we must have the support of the American people.

NORA SPENCER HAMNER, *Executive Secretary, Richmond Tuberculosis Association.*

Proceedings
Medical Society of Virginia
ANNUAL MEETING
October 5, 6, 7, 1942
Hotel Roanoke
Roanoke, Virginia

SCIENTIFIC SESSION
Monday, October 5

The Medical Society of Virginia convened for its first general session on Monday evening, October 5, 1942, at 8:30 o'clock, in the ballroom of the Roanoke Hotel, Roanoke, with Dr. W. L. Powell, General Chairman of the Committee on Arrangements, presiding.

Following the call to order by Chairman Powell, the invocation was said by the Reverend A. H. Hollingsworth, of Roanoke.

It was announced that the guest speaker of the evening, Dr. James E. Paullin, of Atlanta, Ga., Professor of Clinical Medicine at Emory University, President-Elect of the American Medical Association, would not be present, his plane being unable to land at Roanoke because of the bad weather. Dr. Paullin, who is a member of the Federal Procurement and Assignment Board, was to speak on the subject, "The Role of the Medical Profession in the Present Emergency".

Chairman Powell presented the President of the Society, Dr. Roshier W. Miller, of Richmond, who read his address on "The Year's Activities".

Upon request of Dr. J. Bolling Jones, Chairman of the Membership Committee, President Miller read the following list of members whose deaths had been reported since the last annual meeting:

Dr. Joseph Frank Slade, Sussex, October 14, 1941.
Dr. Thomas Franklin Dodd, Alexandria, August 14, 1941.
Dr. Edmund Anderson Terrell, Fredericks Hall, September 18, 1941.
Dr. James Gordon Trant, Richmond, October 29, 1941.
Dr. Clarence Albert Ransom, East Falls Church, September 23, 1941.
Dr. George R. Sledge, Parksley, October 3, 1941.
Dr. A. B. Smith, Snowville, September 17, 1941.
Dr. Greer Baughman, Richmond, December 2, 1941.
Dr. Sidney Lockhart Scott, Fredericksburg, December 16, 1941.
Dr. John W. Bolen, Galax, November 2, 1941.
Dr. Robert Coalter Bryan, Richmond, December 24, 1941.
Dr. Harry L. Myers, Norfolk, January 5, 1942.
Dr. William Johnston Strother, Culpeper, February 14, 1942.
Dr. Charles Wilson Doughtie, Norfolk, March 5, 1942.
Dr. Charles McCulloch, Lexington, March 12, 1942.
Dr. Aaron Jeffery, Newport News, April 14, 1942.
Dr. William Binford King, Arlington, April 10, 1942.
Dr. William Roane Aylett, Tappahannock, April 25, 1942.
Dr. Roy Knight Flannagan, Richmond, June 18, 1942.
Dr. Noah M. Robinson, Vinton, March 5, 1942.
Dr. Henry G. Steinmetz, Flint, Mich., May, 1942.
Dr. Marvin Everette Nuckols, Richmond, July 21, 1942.
Dr. Arthur Blackwell Cosby, Big Island, June 26, 1942.
Dr. Horace Taylor Hawkins, Waynesboro, July 30, 1942.
Dr. Robert Newton Graham, St. Charles, July 29, 1942.
Dr. Luther M. Abbott, New Castle, August 16, 1942.
Dr. Thomas Lea Brooks, Oceana, August 21, 1942.
Dr. Joseph Lynn Deitrick, Norfolk, August 30, 1942.
Dr. Alexander Watkins Terrell, Lynchburg, August 30, 1942.
Dr. Joseph Hill Winfrey, Glen Allen, September 9, 1942.
Dr. Benjamin Alonza Rice, Forest Depot, June 16, 1942.
Dr. Littleberry Stainback Foster, Williamsburg, September 23, 1942.

The Assembly then stood for a moment in silence, in respect to the memory of those deceased.

President Miller presented Mr. F. M. Rivinius, Chairman of the Roanoke County Chapter of the American Red Cross, who addressed the Society on the subject of "American Red Cross in War Time".

The President announced that the following had been appointed as delegates to this meeting from the Medical Society of the State of North Carolina: Dr. Newsom P. Battle, Rocky Mount, N. C.; Dr. S. M. Bittinger, Black Mountain, N. C.; Dr. John C. Tayloe, Washington, N. C.; and Dr. Moir S. Martin, Mount Airy, N. C., but none of these gentlemen at this time responded to the President's invitation to make himself known.

At this point President Miller asked Mr. Lloyd G. Cecil, Laboratory Technician, Lewis Gale Hospital, Roanoke, to take the chair for the rest of the session. Mr. Cecil introduced Warrant Officer Henry R. Evans, Pharmacist, United States Navy, Technical Supervisor of the Red Cross Army-Navy Plasma Center, Bethesda, Md. Mr. Evans made a short address and then showed a moving picture on the preparation of plasma and another on the regeneration of plasma.

The evening session then adjourned, at 10:15 P. M.

Tuesday, October 6
Medical Section

The Medical Section of the Medical Society of Virginia met at 9:50 A. M. on Tuesday, October 6, in the ballroom of the Roanoke Hotel, with Dr. Roshier W. Miller, President of the Society, presiding.

Dr. T. Jefferson Hughes, Roanoke, read his paper entitled "Some of the Do's and Don't's in the Treatment of Fractures with Special Reference to the Rural Practitioners, Whose Burdens and Responsibilities Will be Increased by the National Emergency". (Illustrated by lantern slides.) This was discussed by Dr. Bernard H. Kyle, Lynchburg, and Dr. E. P. Tompkins, Lexington, and by Dr. Hughes in closing.

The paper of Dr. Benjamin M. Kagan, of Richmond,

on "The Clinical Significance of the Serum Proteins" was read by title, it being stated that Dr. Kagan is now in the Army.

Dr. William Bickers, of Richmond, read his paper entitled "Leukorrhea: A New Classification and a New Approach to Treatment" which was illustrated by lantern slides.

Dr. T. Dewey Davis, Richmond, read his paper on "Acute Cirrhosis of the Liver", which was discussed by Dr. Blanton P. Seward of Roanoke and by Dr. Davis in closing.

Dr. K. D. Graves, Roanoke, read his paper entitled "The Eyes as Portals of Entry for Certain Air-Borne Infectious Diseases". This was discussed by Dr. Fred E. Hamlin of Roanoke and, in closing, by Dr. Graves.

The paper of Drs. Paul D. Camp and Louise Galvin of Richmond on "Rheumatic Fever and Rheumatic Heart Disease in Virginia" was read by Dr. Camp and was discussed by Dr. Galvin. There was further discussion by Dr. J. Edwin Wood, Jr., Charlottesville, Dr. F. D. Wilson, Norfolk, and in closing by Dr. Camp.

The program having been completed, the Medical Section then adjourned, 12:00 o'clock noon.

Tuesday, October 6
Surgical Section

The Surgical Section of the Society convened in Parlors A and B of Hotel Roanoke, at 9:45 A. M., Tuesday 6, and Dr. James W. Anderson, vice-president, and Dr. Julian L. Rawls, councilor, both of Norfolk, took turns in presiding.

The first paper presented was that by Dr. Ernest L. Copley of Richmond on "Hypertensive Arterial Disease" and this was discussed by Dr. J. Morrison Hutcheson and Dr. C. C. Coleman of Richmond, and by Dr. Copley in closing.

The next paper, "A Further Report on the Use of Radium in Benign Conditions Causing Uterine Bleeding", was given by Dr. W. Lowndes Peple of Richmond. This was discussed by Dr. Alfred P. Jones of Roanoke and Dr. J. L. Rawls of Norfolk, with Dr. Peple closing the discussion.

Dr. Philip Jacobson of Petersburg, then read his paper entitled "Further Experience with Tubal Division in Salpingitis", which was discussed by Dr. Paul Davis of Roanoke.

A paper on "Surgical Treatment of Orbital Tumors" was next presented by Dr. C. C. Coleman of Richmond.

Dr. Linwood D. Keyser of Roanoke read a paper on "The Clinical Manifestations of Colitis and Its Treatment", this being discussed by Dr. George B. Lawson, also of Roanoke.

The last paper of this Section, presented by Dr. M. L. Dreyfuss of Clifton Forge and entitled "Benign and Malignant Lesions of the Urachus", was discussed by Dr. A. I. Dodson of Richmond.

Adjournment followed.

Tuesday, October 6
General Session

The Medical Society of Virginia reconvened in the ballroom of the Hotel Roanoke and was called to order at 2:45 P. M. by the President, Dr. Roshier W. Miller.

Dr. David C. Wilson, of University, read his paper entitled "Treatment of the Mental Diseases Related to the Involutional Period", which was discussed by Dr. Beverley R. Tucker of Richmond, and by Dr. Wilson in closing.

Dr. William B. Porter, of Richmond, at the request of the President introduced the next speaker on the program, Dr. Julian M. Ruffin, Professor of Medicine in Duke University Medical School, Durham, N. C., an invited guest.

Dr. Ruffin then read his address on "Amebic Dysentery: Its Recognition and Treatment—A Clinical Discussion".

Dr. Warren T. Vaughan, Richmond, presented his paper entitled "Lacquer Dermatitis" (illustrated by lantern slides), which was discussed by Dr. Wyndham B. Blanton of Richmond and Dr. D. C. Smith of University of Virginia.

Dr. William B. Porter, Richmond, read his paper entitled "Cardiodiaphragmatic Syndrome", which was discussed by Dr. Hugh H. Trout, Roanoke, and by Dr. Porter in closing.

The President then read a telegram of greetings and good wishes from Mr. C. P. Loranz, Secretary-Manager of the Southern Medical Association, following which the session adjourned.

Wednesday, October 7
General Session

The Society reconvened in the ballroom of the Hotel Roanoke and was called to order at 9:55 A. M. by President Miller.

The President read the following telegram received on October 5 from Dr. James E. Paullin, of Atlanta:

"Please extend to the Medical Society of Virginia my deepest regret in not being able to attend your meeting tonight. When American Air Lines plane passed Roanoke at 10:30 this morning it was impossible to land. At Bristol I was told it would be impossible to reach Roanoke by bus or train before nine or ten o'clock tonight. The flight was continued to Knoxville and then to Atlanta. Will you please express to the assembled members my deep disappointment in not meeting with you, and may I extend my congratulations to your Society for the important and patriotic service you are doing for American medicine and the Procurement and Assignment Agency. Better luck next time."

(Due to the fact that the lantern-slide projector had not been set up, the papers were taken up out of order.)

Dr. R. Finley Gayle, Jr., Richmond, read his paper entitled "The Care of the Mentally Ill in a General Hospital", which was discussed by Drs. J. Asa Shield and Beverley R. Tucker, of Richmond, and in closing by Dr. Gayle.

The President then presented the guest speaker for this session, Dr. Robert L. Bennett, Director of the

Postgraduate School of Physical Therapy at the Georgia Warm Springs Foundation, who addressed the Society on the subject of "The Basis for the Newer Methods of Treatment in Acute Poliomyelitis".

The paper of Drs. Lewis W. McIlhany and Dudley C. Smith of Charlottesville, on "Epidemiologic Studies in Syphilis" (illustrated by lantern slides), was presented by Dr. McIlhany and was discussed by Dr. Thomas W. Murrell, of Richmond, and by Dr. McIlhany in closing.

Dr. Julian R. Beckwith, Clifton Forge, read his paper entitled "Adams-Stokes Syndrome as a Complication of Myocardial Infarction: Report of Two Cases Resulting from Different Underlying Mechanisms" (illustrated by lantern slides). This was discussed by Dr. J. Edwin Wood, Jr., Charlottesville, and Dr. Paul D. Camp, Richmond, and in closing by Dr. Beckwith.

Dr. H. Hudnall Ware, Richmond, read his paper entitled "The Physician's Responsibility in Planned Parenthood", which was discussed by Dr. W. R. Payne, Newport News.

Installation of President

PRESIDENT MILLER: We come now to a very pleasant duty—the induction of our new president. When I say it is pleasant it does not mean that I have felt the office a burden, nor am I weary of service. The year has been a very delightful one for me, first, because those in the office at Richmond have given unstintingly in service and, second, because all those whom I have called upon for help have responded willingly and generously.

This is a delightful duty because Jack is a good boy. He is a very worthy successor. Everybody loves him; everybody esteems him. I ask Miss Edwards and Dr. Moncure to escort Dr. Emmett to the platform.

Dr. Emmett, I turn over to you this gavel and assure you of my loyalty. I am willing to serve you during the year in any capacity, even if you call upon me to be your cabman.

DR. JOHN MOREHEAD EMMETT: Members of the Medical Society of Virginia, members of the Auxiliary, and President Miller:

Dr. Miller, by virtue of the excellency of his administration, his personal charm, and his eloquence, has established an example which it is going to be very difficult for subsequent presidents to compete with. Thirty years ago Dr. Miller was my instructor at the Medical College of Virginia. The years since then have in no way dimmed his ability to teach, and I am grateful to him for the information and inspiration that have come to me from my association with his administration.

When I review the accomplishments of my illustrious predecessors in this office I am embarrassed by my own limitations. I shall necessarily lean very heavily upon the Council and upon the membership and, last but not least, upon Miss Edwards, who will assist me very materially in directing the destinies of our Society during this coming year.

The Medical Society of Virginia has many problems to face during the year ahead. These problems can only be solved by a united front but, I am positive that with the information and the enthusiasm which have been manifested in this meeting, our members understand fully many of our difficulties. I particularly have in mind the preparation for the legislative battles which we must face in 1944. We can meet these problems only by each doctor assuming his responsibility of education and direction of his patients and the further education and direction of prospective legislators.

The success of my administration will be dependent, as is the success of all administrations, upon the voluntary support of the membership of our Society, and I have no reason to doubt your loyalty and your support. I am sincerely grateful to you for this honor which you have bestowed upon me.

I wish to announce now the appointments to the standing committees. I shall not at this time announce the special committees, the list of which will appear in an early issue of our JOURNAL.

President Emmett then read the list of committee appointments (published under President's Message in this issue of the MONTHLY).

PRESIDENT EMMETT: If there is nothing further to come up, the meeting is adjourned.

The Society then adjourned at 12:40 P. M., Wednesday, October 7, following which a number of members went to Catawba Sanatorium where lunch was served and the program was presented by the staff of the Sanatorium in conjunction with the Society of Chest Physicians of Virginia, with Dr. Roshier W. Miller presiding. The papers read were:

"Report on Culture Work of Microscopically Negative Sputum for Tubercle Bacilli for a Period of Eight Years" by Dr. J. B. Nicholls and A. W. Bengston, and

"Bilateral Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis" by Dr. L. R. Broome.

Following this, the meeting adjourned *sine die*.

Before and after the morning sessions on Tuesday and prior to the morning session on Wednesday, motion pictures were shown on "Post-Partum Hemorrhage" and on "Peptic Ulcer", both of which were well attended.

BUSINESS SESSIONS

Council

October 5, 1942

The annual meeting of the Council was held at the Hotel Roanoke, Roanoke, on October 5 at 11:00 A. M., with Dr. Roshier W. Miller, President, presiding. Others in attendance were Dr. J. M. Emmett, President-Elect; Drs. James W. Anderson and Ernest G. Scott, Vice-Presidents; Drs. Griffin W. Holland, Julian L. Rawls, J. M. Hutcheson, W. C. Akers, W. L. Powell, A. F. Robertson, Jr., H. B. Mulholland, and C. B. Bowyer, Councilors; Dr. I. C. Riggin, State Health Commissioner; Dr. Wyndham B. Blanton, Editor of the VIRGINIA MEDICAL MONTHLY; and Miss Edwards, Secretary.

The minutes of the Council meetings as published in the MONTHLY (February, 1942, pages 101-2; July, 1942, page 393; August, 1942, page 460) were approved.

A letter from Dr. Trout was read expressing his appreciation of the approval by the Council of the work done by him as Chairman of the Procurement and Assignment Service of Virginia.

Dr. Emmett, who had been appointed to look into the feasibility of a joint meeting with the West Virginia State Medical Association, reported that, after consultation with officers of that organization, it was their opinion that such a meeting should be postponed for the duration.

A letter was then read from Dr. Preston, secretary of the Virginia State Board of Medical Examiners, telling of the appointment of a committee from the Board to cooperate with the Legislative Committee regarding proposed amendments to the Medical Practice Act. This was referred to the Legislative Committee.

The secretary stated that the $2.00 increase in dues for the use of the Legislative Committee would be automatically discontinued this year unless otherwise provided. It was stated by one Councilor that there had been some criticism in his district of this additional charge, especially in view of the solicitation of the Special Fund. However, it was moved that the $7.00 dues be continued two more years and each Councilor was requested to explain to his District why this is being done. If the Councilors explain this to the members, it was felt there will be no question as to the advisability of the fund. The motion was seconded and carried.

The question of exemption from dues of members in the Services was next discussed, and it was moved and carried that this exemption be continued.

Mr. G. H. Winfrey, representing the American Mutual Liability Insurance Company, was then given the privilege of the floor and reported the experience of that company in the field of professional protection insurance for physicians in Massachusetts, New York and other states. He said his company had removed the extra charges for this professional protective insurance on doctors engaged in ethical contract practice, partnership practice, the specialties, etc., and offered to issue it to members of the Medical Society of Virginia on the same terms. After discussion, it was moved and carried that this be referred to the Medical Economics Committee.

Mr. J. A. Rorer, representing the Department of Clinical and Medical Education of the Society, stated that the work of the Department had been seriously affected by the war. In their report, they requested that the appropriation be the same as last year but, after due consideration, they had decided that they would need only $600.00 for the coming year.

The Budget, as prepared by Drs. Hutcheson and Powell, was then presented as follows:

BUDGET FOR YEAR
October 1, 1942—September 30, 1943

MEDICAL SOCIETY OF VIRGINIA	
Salaries	$2,880.00
Rent and Phone	365.00
Stationery and Office Supplies	75.00
Repairs and Replacement	40.00
Postage	225.00
Audit Fee	30.00
Social Security Tax	24.00
Miscellaneous	25.00
President's expenses	100.00
President-elect's expenses	50.00
Councilors and Officers' expense	75.00
Delegates to A.M.A.	100.00
Scientific Exhibits	350.00
Dept. Clin. and Med. Education	600.00
Medical Economics	75.00
Walter Reed Commission	75.00
Child Welfare	10.00
Maternal Health	20.00
Cancer	20.00
Medical Preparedness	75.00
Industrial Health	20.00
Convention expenses:	
Reporting	150.00
Programs	125.00
Badges	55.00
Registration cards	5.00
Reports for delegates	15.00
Invited guests	200.00
Publicity	60.00
	$5,844.00
VIRGINIA MEDICAL MONTHLY	
Salaries	$2,880.00
Rent and Phone	365.00
Preparation of journal	6,500.00
Stationery and supplies	35.00
Repairs and replacement	40.00
Office postage	45.00
Audit fee	30.00
Miscellaneous	20.00
Social Security Tax	24.00
	$9,939.00
Total	$15,783.00

It was recommended that this be adopted.

Dr. Bowyer stated that Dr. Trout had been to considerable expense in maintaining an office for the Procurement and Assignment Work. He had been paying the salary of a secretary for several months and although this would be taken care of in the future by the Government, they would not reimburse him for the past amount. It was suggested that the Council should make some recommendation to the House of Delegates about this and Dr. Powell was asked to look into the matter.

An opinion was asked as to the possibility of having a meeting next year. There seemed to be differences of opinion but no action was taken as it was felt this was a matter for the House of Delegates to decide.

Dr. Miller announced the names of several delegates who had been appointed from the Medical Association

of the State of North Carolina, and he hoped the Councilors would look out for them.

There being no further business, the Council adjourned.

AGNES V. EDWARDS,
Secretary.

HOUSE OF DELEGATES

October 5, 1942

The first meeting of the House of Delegates was called to order by the President, Dr. Roshier W. Miller, at 2:30 P. M., on October 5, in the Hotel Roanoke, Roanoke.

The minutes of the last meeting were approved as published in the December issue of the VIRGINIA MEDICAL MONTHLY (pages 703-14).

The budget, as approved by the Council, was then presented by Dr. J. M. Hutcheson. Dr. Bowyer stated that Dr. Trout, in connection with the Procurement and Assignment Service, had to employ a secretary, in addition to considerable other expense incident to the work. No arrangements were made to pay the salary of that secretary up to the present time but in the future this will be paid by the Federal Government. He recommended that the Society reimburse Dr. Trout for the secretarial work for the past seven months at $90.00 a month. This was seconded and carried, and the budget as a whole was then adopted.

The Council had also recommended that the $2.00 increase on dues for Legislative work be continued for 1943-4. Dr. Moncure moved that this be continued. Carried.

Dr. Dean Cole, Chairman of the Legislative Committee, then presented the following statement of the Special Fund:

SPECIAL FUND FOR LEGISLATIVE WORK

Balance on hand, October 1, 1941		$1,532.49
Receipts October 1, 1941-September 30, 1942		3,183.00
		$4,715.49
Disbursements:		
Attorney's Services	$700.00	
Preparation of material for Supreme Court	450.00	
Phone calls, letters, wires, etc.	284.85	
		1,434.85
		$3,280.64
Voluntary contributions solicited by Committee		$1,366.00

The question as to having a meeting in 1943 was next considered. Dr. W. D. Kendig moved that the decision be left to the Council. Seconded. Dr. P. St. L. Moncure stated that he thought the House of Delegates should handle this and decide whether or not to hold the meeting next year. Dr. Guy Fisher offered a substitute motion that the House of Delegates go on record as being in favor of having a meeting next year, and this was seconded and carried.

The delegates were given, a five minute recess to select the members of the Nominating Committee, and the following were named:

Dr. Griffin W. Holland, Eastville.
Dr. C. L. Harrell, Norfolk.
Dr. Frank Johns, Richmond.
Dr. W. D. Kendig, Kenbridge.
Dr. B. F. Eckles, Galax.
Dr. F. A. Farmer, Roanoke.
Dr. Guy Fisher, Staunton.
Dr. Percy Harris, Scottsville.
Dr. W. C. Caudill, Pearisburg.

It was announced that several delegates had been appointed from the Medical Society of the State of North Carolina, and the members were asked to see that these doctors were shown all courtesies.

The reports of committees, as published in the September, 1942, issue of the MONTHLY were next considered. The President announced that Drs. Julian L. Rawls and J. L. Hamner had been appointed to go over these reports in advance in order that special recommendations might be properly considered. He also stated that action on the reports would be taken as a whole after they had been presented.

Publication and Program (page 507). Dr. Blanton, chairman, stated he had nothing to add except that he was retiring as Editor this year and wished to thank the Society for its uniform courtesies during the ten years he had served.

Scientific Exhibits and Clinics (pages 507-8).

Department of Clinical and Medical Education (page 508). It was stated that the appropriation requested had been changed to $600.00.

Legislation (page 509-11). The report of this Committee received considerable discussion and it was the consensus of the House that the Society should support the program of the Committee. Dr. Cole, chairman, moved that the President of the Society be instructed to appoint a committee of three members to cooperate with the Advisory Council of the General Assembly in their study of the coroner situation in Virginia. Carried.

Membership (page 511). Attention was called to the fact that the retiring president was recommended for honorary membership, and this was adopted.

Judicial (page 511). Dr. Moncure, chairman, presented the following supplement:

In 1930 or 1931, Congress cut down our representation to nine instead of ten districts, which, according to the Medical Practice Act, automatically cut down the Medical Examiners to nine, and also the Councilors to nine. The new congressional division was no doubt really enacted for legislative purposes, but some of us working largely from a purely scientific standpoint and for the best interest of the Society made the recommendation for ten councilor districts, and this was passed unanimously by the House of Delegates at its session at Virginia Beach in October, 1941. We still think some Committee (the Judicial if desired) can continue to study the question of division of the State into Councilor districts best suited for our purposes. I, therefore, recommend to the House of Delegates for its adoption the following which embodies Dr. Robertson's resolution before the Council:

The State shall be divided into the same number of councilor districts as congressional districts and be comprised of the same counties; and the Judicial Committee should continue the study of such changes of its councilor districts as seem best suited for the interests of the Society.

As this necessitated a change in the By-Laws, it was laid on the table until the following day.

Advisory to the Woman's Auxiliary (page 511). The following report from the Auxiliary President was then read:

MR. CHAIRMAN:

It is my privilege to give you a report for this year from your auxiliary. Having spent two years learning to know the auxiliary at work, I wish to say it is a very vital factor in the progress of organized medicine in the nation, in the state, and in the local society. Health Defense was the objective for the year, given us by the Auxiliary to the A.M.A.; our State theme has been "Educate and Evaluate"—educate ourselves and evaluate our learning so as to be the greatest help to the greatest number, not only in our own auxiliary but in the lay organizations to which we belong, and therein is found our strength.

The reports of our standing committees and local presidents show active work all along the line and accompany this report. An abstract of these will be printed in the MONTHLY.

We have with the consent of our advisors joined hands with the women's organizations in the state, helping to give a unified front in the war effort. If I went into detail on our work, this would be so long you wouldn't read it, so I am going to close with an appeal to each of you to ask your wife and sister and mother to join the auxiliary, either as a member of a local group or as a member at large, taking my word for it that it is quite worth her while.

Respectfully submitted,
(MRS. E. LATANE) LOUISE W. FLANAGAN,
President, Auxiliary to the Medical Society of Virginia.

Child Welfare (pages 512-3). Dr. F. D. Wilson, chairman, explained parts of this report and called particular attention to their request that legislation be secured requiring sectarian and non-sectarian schools to be inspected by the State Department of Health, and also that teachers in grade schools present satisfactory evidence of freedom from tuberculosis.

Maternal Health (pages 513-5). Dr. Groseclose, a member of the committee, called particular attention to the resolutions in this report and moved that the House approve them. Seconded and carried.

Walter Reed Commission (page 515).

To Arrange Medical Program of Virginia Conference of Social Work (page 515).

Pneumonia Commission (pages 515-6). Dr. H. H. Henderson, State Epidemiologist, explained certain points in this report.

To Confer with State Board of Nurses' Examiners (page 517).

Syphilis Control (page 517).

Tuberculosis (page 517). Dr. Harrell, a member of the Committee, moved that this body go on record as approving that State Sanatoria take tubercular diabetic patients.

Cancer (page 519). Dr. Lehman, chairman, reported that the C. & O. Hospital Cancer Clinic, under the direction of Dr. J. M. Emmett, had been certified since writing this report.

Industrial Health (page 519).

Coordination of Adjuncts of Medicine, i.e., Dentistry, Pharmacy and Nursing. Dr. Gorman, chairman, stated that the committee recommended that it be continued to study this problem and that this committee be named from Richmond in order to facilitate its work and meetings, and its recommendations be made to the component societies, and the committee be composed of doctors, dentists, nurses, pharmacists, and hospital superintendents or such members as the President may deem best. He felt the committee could work out a publicity program in way of education to the public explaining to them the shortage of doctors, nurses, pharmacists, and dentists, and asking their cooperation. Articles could be used in newspapers and on the radio, together with a printed statement which could be sent out from offices and in communications to patients.

Health Museum. Upon request of Dr. Fletcher Wright, chairman, who is now in the Service, Dr. R. J. Main sent the following report of what had been done in regard to the health museum:

TO THE HOUSE OF DELEGATES:

At the request of Dr. Wright I am reporting on the development and present state of the Virginia Health Museum, of which I am chairman. Dr. Fletcher J. Wright of Petersburg and his committee met with a group of interested people at one time, and Dr. Wright attended the second and final meeting of this committee. At that time it was decided to start this museum, to be located in the Valentine Museum for the duration of the war. Dr. Wright and his committee seemed to be in favor of your society being represented in this museum, and stated that he would approach you on this subject. I have heard nothing more from him, however. The museum has now been open some several months and is apparently visited by the majority of those going to the Valentine Museum. I understand that the visitors have evidenced considerable interest in the exhibits we have on display.

The societies represented with an exhibit at the present time are: Richmond Academy of Medicine, the Virginia Cancer Foundation, Virginia Dietetic Association, Medical College of Virginia, Virginia Nutrition Committee, Richmond Dairy Council, and the Virginia Tuberculosis Association.

Recently I wrote the Richmond Academy of Medicine stating that I believed that such a project should be sponsored and controlled by a medical group such as theirs or the Medical Society of Virginia, and expressed my hope that they or the State Society, or both, would see fit to take over this project; that in case they were not interested I hope that they would, or I would, take up this proposition with the State Society. One of my reasons for suggesting this procedure is that the A.M.A. is on record as encouraging their constituent societies to found and maintain such musea. If neither society is interested I will have to try to interest some lay group. The Richmond Academy of Medicine has requested some more information from me so that their board may discuss this proposition more intelligently.

In my opinion there is absolutely no doubt as to the public demand for and interest in such projects. Moreover, I believe in the long run this project will do far more to combat quackery in all forms than the voting of sums to defray the expense of legally prosecuting well established quacks.

Respectfully,

R. J. MAIN,
Chairman, Virginia Health Museum Committee.

To Study Clinical Laboratories (pages 519-20). Dr. R. D. Kimbrough stated that the resolution passed by the House of Delegates last year to appoint a committee for the study of clinical laboratories in Virginia was not intended to be asking for a survey or investigation of laboratories. The plan was for this committee to be prepared to advise the General Assembly, Health Department, or other agencies, as to possible standards, or requirements for clinical laboratories in Virginia. Also, to help decide whether clinical laboratories should be licensed, or required to meet certain requirements, and to advise on any other problems that may arise. He moved that this committee be continued with these instructions.

Delegates to American Medical Association (page 520).

Delegate to U. S. Pharmacopoeial Convention (page 520).

It was then moved, seconded and carried that the reports as a whole be adopted.

After this, Dr. E. P. Lehman presented the following resolution which was adopted:

WHEREAS, the VIRGINIA MEDICAL MONTHLY ranks by common consent among the two or three outstanding state medical journals of the country: and

WHEREAS, the high quality of the MONTHLY is largely the result of the judgment, the literary skill and the untiring and unselfish enthusiasm of its Editor, and

WHEREAS, Dr. Wyndham B. Blanton, Editor for the past ten years, is retiring at this session of the Medical Society of Virginia.

BE IT RESOLVED, that the House of Delegates go on record in appreciation of Dr. Blanton's unexcelled services, and

BE IT FURTHER RESOLVED, that the Secretary be instructed to express to Dr. Blanton in writing the gratitude of the Medical Society of Virginia.

Dr. C. L. Harrell moved that a committee be appointed to investigate the distribution of interns throughout the State and report to the Governor with an idea of having a more equitable distribution in defense areas. Seconded. Dr. Trout felt this was a problem of the Procurement and Assignment Board and it was not thought the Governor would be able to do anything about it. Dr. Harrell amended his motion omitting the words "and report to the Governor". This was carried.

Dr. J. L. Rawls asked the delegates to be on the lookout for a bill which might be introduced into Congress and would add an additional 3 per cent tax to the present Social Security Tax for National Hospital Insurance. This bill as proposed would pay the individual who required hospitalization $3.00 a day presumably for the hospital bill. However, it is paid to the person individually after he leaves the hospital, so in all probability the hospital could not count on it. In addition, $3.00 a day will not begin to pay the hospital bills at the present rate. This bill has not been introduced, but it is rumored that it will come up soon. When it does, please read it and if you think it is a vicious bill and will not serve the purpose intended, please communicate with your representatives in Congress and ask them to vote against it.

There being no further business, the House adjourned to meet again the following day immediately after the morning session.

October 6, 1942

The second meeting of the House of Delegates was held in the ballroom at 12:45 P. M., October 6, with Dr. Miller, President, presiding.

The Medical Economics Committee presented the following report:

The American Mutual Liability Insurance Company offers the members of the Medical Society of Virginia professional protection insurance on a state-wide group basis with identically the same premium charge applying to individual members throughout the state that is now in effect in the larger city and county component societies.

In addition, the company will require no extra or penalty premium for those of our members doing ethical contract practice, nor any extra premium for members in the specialties, nor any extra charge for members practicing in any partnership, nor will there be any extra premium charged those members who maintain cots in or adjoining their offices used for the comfort and convenience of patients undergoing treatment or minor surgery.

The company will return to its policyholders in this department, in cash or as a credit on the renewal of policies, the same rate of dividend declared on all of its business—whether its business with the members of the Medical Society of Virginia is profitable or not.

Two years after this business with the company has been in force, the company will render to the Medical Society of Virginia a complete report showing its premium income during that time and its payments and expenses made in the settlement and handling of claims. When this is done the company and the Medical Society of Virginia will be in a position to agree upon a rate based on the established experience.

The company's resources total nearly fifty million dollars, it does business in every state in the union, it has the highest rating awarded insurance companies, and our independent investigation of its manner of doing business in this state indicates clearly that it enjoys nation-wide confidence. The plan proposed is in successful operation in New York, Massachusetts, and other states, and your committee recommends its acceptance by our Society and we request the full cooperation of our members in its full development in Virginia.

GUY FISHER,
Chairman.

This was accepted.

The changes in the By-Laws were next taken up. These were to continue the dues as $7.00 through 1943 and 1944, and to omit Section 7 of Article VIII with regard to Councilor districts, until such time as the Judicial Committee might be able to work out a suitable plan. Adopted.

The Nominating Committee gave the following slate, which was unanimously adopted:

President-Elect—Dr. C. B. Bowyer, Stonega.

Vice-Presidents—Dr. W. L. Powell, Roanoke.
Dr. W. R. Payne, Newport News.
Dr. P. W. Boyd, Winchester.

Secretary-Treasurer—Miss Agnes V. Edwards, Richmond.

Dr. J. M. Emmett, Clifton Forge, was to succeed to the Presidency following this meeting.

Councilors from the even numbered districts were named as follows for a term of two years:

2nd—Dr. Julian L. Rawls, Norfolk.
4th—Dr. J. L. Hamner, Mannboro.
6th—Dr. J. J. Giesen, Radford.
8th—Dr. H. B. Mulholland, University.

It being stated that there would be a vacancy for the 9th District due to the fact that Dr. Bowyer had been made President-Elect, Dr. W. C. Caudill, Pearisburg, was elected as councilor for the unexpired term of one year.

Dr. J. M. Hutcheson, Richmond, was elected delegate and Dr. Carrington Williams, also of Richmond, alternate to the American Medical Association for a term of two years, Drs. W. B. Martin and Roshier W. Miller holding over as delegate and alternate for another year.

Dr. W. O. Bailey moved that a vote of thanks be extended to the Roanoke Academy of Medicine for its splendid preparations and entertainment and to the Hotel Roanoke, it being felt that the service there had been almost perfect. This was unanimously adopted.

Dr. Frank Johns moved that the House of Delegates go on record as expressing thanks to Mr. Preston Collins for his work on our behalf in the last legislature. Carried.

The place of meeting for next year being left to the Council, Dr. Fisher moved that they be urged to decide on this as soon as possible so as to make reservations because of hotel space, etc. Seconded. Dr. Rawls did not believe any hotel could guarantee reservations a year from now as they do not know what the government is going to do. Dr. Fisher's motion was carried.

There being no further business, the House adjourned.

AGNES V. EDWARDS,
Secretary.

Approved:
ROSHIER W. MILLER,
President.

Auditor's Report

October 1, 1941-September 30, 1942

THE OFFICERS AND COUNCILORS,
MEDICAL SOCIETY OF VIRGINIA,
RICHMOND, VIRGINIA.

GENTLEMEN:

We have made an examination of the books of account of the Medical Society of Virginia for its fiscal year ended September 30, 1942, and present herewith our report thereon, consisting of the following financial statements and related comments.

EXHIBITS

"A" Balance Sheet.
"B" Statement of Income and Expense.
"C" Receipts and Disbursements—Special Funds.

Comments

The financial condition of the Society at September 30, 1942, is stated in the Balance Sheet, Exhibit "A". The assets and liabilities as of Setpember 30, 1941, and September 30, 1942, are shown in condensed form below:

ASSETS:	9-30-42	9-30-41
Cash	$23,985.60	$19,319.07
Accounts Receivable	1,420.48	1,255.94
U. S. Savings Bonds—At Cost	2,400.00	2,400.00
TOTALS	$27,806.08	$22,975.01
LIABILITIES AND RESERVE:		
Accounts Payable	$ 665.71	$ 688.70
Reserve for Special Funds	4,646.64	2,350.71
TOTALS	$ 5,312.35	$ 3,039.41
SURPLUS—GENERAL FUND:		
Excess of Assets over Liabilities	22,493.73	19,935.60
	$27,806.08	$22,975.01

The Income and Expenses of the General Fund for the fiscal year ended September 30, 1942, are detailed in Exhibit "B", prepared on the cash receipts and disbursements basis. The operations for both the current and preceding year are summarized as follows:

	YEAR ENDED	
INCOME:	9-30-42	9-30-41
Medical Society	$ 5,765.79	$ 5,522.12
Medical Monthly Publication	11,559.20	11,657.06
TOTALS	$17,324.99	$17,179.18
EXPENSES:		
Medical Society	$ 4,940.68	$ 5,302.46
Medical Monthly Publication	10,013.71	9,384.38
TOTALS	$14,954.39	$14,686.84
SURPLUS INCOME FOR YEAR	$ 2,370.60	$ 2,492.34

The foregoing table does not include the receipts and disbursements of the special commercial exhibits fund, and the special legislative committee fund. The transactions of these funds are given in Exhibit "C" of our report.

The membership dues are $7.00 annually and collections thereon are accounted for in the books of account as follows:

The General Fund expenses	$ 3.00
For Subscription to the Medical Journal	2.00
For Legislative Committee expenses	2.00

Cash balances as of September 30, 1942, and names of the depositories are listed below:

Checking Account:		
First & Merchants National Bank		$11,155.48
Savings Accounts:		
First & Merchants National Bank	$ 4,312.63	
Southern Bank & Trust Co.	3,072.91	
The Morris Plan Bank of Virginia	5,444.58	12,830.12
TOTALS		$23,985.60
Balances on deposit are for account of:		
General Fund	$19,338.96	
Legislative Committee Fund	4,646.64	$23,985.60

Investment in United States Savings Bonds was as follows:

Cost	Value 9-30-42	Value At Maturity	Date Of Maturity
$ 525.00	$ 602.00	$ 700.00	February 1, 1946
1,500.00	1,600.00	2,000.00	October 1, 1949
375.00	395.00	500.00	March 1, 1950
$2,400.00	$2,597.00	$3,200.00	

Insurance protection carried as indicated by policies on hand shows:

Office Furniture and Fixtures	$ 1,000.00
Walter Reed Home, Belroi, Virginia	1,000.00
Fidelity Bond—Secretary-Treasurer	2,500.00

Accounts Receivable for membership dues, advertising, and subscriptions to the Medical Monthly publication are stated at collectible value as estimated by the executive Secretary-Treasurer.

All recorded cash receipts were found to have been properly deposited in bank, and disbursements were supported by satisfactory vouchers. Balances on deposit at the close of the year were independently confirmed and bonds owned were verified by inspection of the bonds on hand. The bookkeeping records for the year covered by our examination were found in proper order.

Respectfully submitted,

SHEPHERD, JACKSON & WIGGINS,
Certified Public Accountants.

Balance Sheet—September 30, 1942
Exhibit "A"

Assets

CASH:		
General Fund (Exhibit "B")	$19,338.96	
Special Fund (Exhibit "C")	4,646.64	$23,985.60
DUE FROM MEMBERS:		
(Estimated Collectible Value):		
1942 Dues—125 @ $7.00 each		875.00
ACCOUNTS RECEIVABLE:		
Virginia Medical Monthly:		
For Advertising	$ 519.48	
For Subscriptions (Estimated)	26.00	545.48
SECURITIES:		
United States Savings Bonds—At Cost (Current Redemption Value $2,597.00)		2,400.00
TOTAL ASSETS		$27,806.08

Liabilities and Surplus

ACCOUNTS PAYABLE:		
For Preparation of MEDICAL JOURNAL—September, 1942 Issue	$ 503.51	
For Printing and Supplies	139.10	
For Social Security Tax	23.10	$ 665.71
RESERVE FOR SPECIAL FUND:		
Unexpended Cash Balance		4,646.64
SURPLUS—GENERAL FUND:		
Excess of Assets over Liabilities		22,493.73
TOTAL LIABILITIES AND SURPLUS		$27,806.08

Statement of Income and Expense
Fiscal Year Ended September 30, 1942
Exhibit "B"

Medical Society of Virginia Division

INCOME:	Actual	Budget
Membership Dues @ $3.00 each	$ 5,114.50	
Royalties on History of Medicine (Net)	43.75	
Interest on Savings Accounts (½)	92.80	
Commercial Exhibits—Net Income	69.52	
Refund by Department of Clinical and Medical Education—1940-41 Budget	445.22	
TOTAL	$ 5,765.79	

EXPENSES:			
Salaries (Apportioned):			
Secretary-Treasurer $1,800.00			
Clerical Assistance 990.00		$ 2,790.00	$ 2,790.00
Office Rent and Telephone		360.74	365.00
Stationery and Office Supplies		76.92	75.00
Repairs and Replacements		98.94	138.00
Postage		202.74	225.00
Audit Fee (½)		30.00	30.00
Society Security Tax (½)		23.10	28.88
Miscellaneous Expense		14.12	25.00
President's Expenses		12.50	100.00
President-Elect's Expenses		-----	50.00
Councilors and Officers' Expenses		30.04	75.00
Delegates to A.M.A. Convention		52.65	100.00
Delegate to U.S.P. Convention		41.22	41.22
Convention Expenses		520.85	610.00
Committee on Scientific Exhibits		236.54	350.00
Department of Clinical and Medical Education		367.70	1,200.00
Committee on Medical Economics		-----	75.00
Walter Reed Commission		24.00	75.00
Committee on Child Welfare		8.00	10.00
Committee on Maternal Health		11.50	20.00
Committee on Cancer		-----	20.00
Committee on Medical Preparedness		36.12	75.00
Committee on Industrial Health		3.00	20.00
TOTALS		$ 4,940.68	$ 6,498.10
SURPLUS INCOME FOR YEAR		$ 825.11	

Virginia Medical Monthly Division

INCOME:	Actual	Budget
Advertising	$ 7,741.43	
Subscriptions:		
Membership Dues—@ $2.00 each	3,409.67	
Non-Members	315.31	
Interest on Savings Accounts (½)	92.79	
TOTAL	$11,559.20	

EXPENSES:		
Salaries (Apportioned):		
Secretary-Treasurer $1,800.00		
Clerical Assistance 990.00	$ 2,790.00	$ 2,790.00
Preparation of Journal (including Cost of Distribution)	6,605.83*	6,815.00
Office Rent and Telephone	361.74	365.00
Stationery and Office Supplies	46.37	35.00
Repairs and Replacements	98.96	138.00
Office Postage	38.06	45.00
Audit Fee (½)	30.00	30.00
Social Security Tax (½)	23.10	28.88
Miscellaneous Expense	19.65	20.00
TOTALS	$10,013.71	$10,266.88
SURPLUS INCOME FOR YEAR	$ 1,545.49	

*Includes cost of 50,000 mailing envelopes on hand at 9-30-42, $214.63. Also includes $100.00 for copy on legal medicine for November 1942 issue of the MEDICAL JOURNAL.

Summary of Operations

DIVISION	ACTUAL INCOME	ACTUAL EXPENSES	SURPLUS INCOME
Medical Society	$ 5,765.79	$ 4,940.68	$ 825.11
Medical Journal	11,559.20	10,013.71	1,545.49
TOTALS	$17,324.99	$14,954.39	$ 2,370.60

RECONCILIATION OF CASH BALANCE:	
Balance—October 1, 1941	$16,968.36
Add: Surplus Income for Year	2,370.60
BALANCE—SEPTEMBER 30, 1942	$19,338.96

Receipts and Disbursements—Special Funds For Fiscal Year Ended September 30, 1942 Exhibit "C"

COMMERCIAL EXHIBITS FUND:		
Cash Balance—October 1, 1941	$ 818.22	
Add: Receipts for the Year	443.33	
TOTAL AVAILABLE		$ 1,261.55
Disbursements for the Year	$ 1,192.03	
Transferred to the General Fund	69.52	
TOTAL ACCOUNTED FOR		$ 1,261.55

LEGISLATIVE COMMITTEE FUND:		
Balance—October 1, 1941	$ 1,532.49	
Receipts:		
Membership Dues @ $2.00 each	3,183.00	
Voluntary Contributions	1,366.00*	
TOTAL AVAILABLE		$ 6,081.49
Disbursements:		
Legal Services and Other Expenses		1,434.85
BALANCE—SEPTEMBER 30, 1942		$ 4,646.64

RECONCILIATION OF CASH BALANCE:	
Balance—October 1, 1941	$ 2,350.71
Add: Excess of Receipts over Disbursements for Year	2,295.93
BALANCE—SEPTEMBER 30, 1942	$ 4,646.64

*Solicited by the Legislative Committee for special work.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us the same.

Facts for Childless Couples. By E. C. HAMBLEN, M.D., Associate Professor of Obstetrics and Gynecology, Duke University School of Medicine; Chief of the Endocrine Division of the Department of Obstetrics and Gynecology and Endocrinology, Duke Hospital, Durham, N. C. Charles C. Thomas, Springfield, Illinois. 1942. 103 pages. Cloth. Price $2.00.

Blood Substitutes and Blood Transfusion. Edited by Stuart Mudd, M.A., M.D., Professor of Bacteriology, University of Pennsylvania School of Medicine; and William Thalhimer, M.D., Director, Human Serum Division Public Health Research Institute of the City of New York, Inc. Charles C. Thomas, Springfield, Illinois. 1942. xiv-407 pages. Illustrated. Cloth. Price $5.00.

Doctors of the Mind. The Story of Psychiatry. By MARIE BEYNON RAY. Little, Brown and Company. Boston. 1942. xii-335 pages. Cloth. Price $3.00.

The Mind and Its Disorders. By JAMES N. BRAWNER, M.D., Medical Superintendent, Brawner's Sanitarium, Smyrna, Ga. Walter W. Brown Publishing Company, Atlanta, Georgia. 1942. 228 pages. Cloth. Price $3.50.

Fundamentals of Psychiatry. By EDWARD A. STRECKER, M.D., Sc.D., F.A.C.P., Professor of Psychiatry and Chairman of the Department, Undergradute School of Medicine, University of Pennsylvania; Psychiatrist to the Pennsylvania Hospital; and Attending Psychiatrist, Psychopathic Division, Philadelphia General Hospital. Philadelphia. J. B. Lippincott Company. 1942. xvii-201 pages. 15 illustrations. Cloth. Price $3.00.

When Doctors Are Rationed. By DWIGHT ANDERSON, Director Public Relations, Medical Society of the State of New York. And MARGARET BAYLOUS, Therapist, Charleston General Hospital, Charleston, W. Va. Coward-McCann, Inc., New York. 1942. 255 pages. Cloth. Price $2.00.

Bacteriology Laboratory Methods. By E. S. KING, M.D., Professor of Bacteriology, Bowman Gray School of Medicine of Wake Forest College; Bacteriologist to the Baptist Hospital, Winston-Salem, N. C. Charlotte Medical Press, Charlotte, N. C. 1941. 175 pages plus index. Cloth. Price $2.50.

Tables of Food Values. By ALICE V. BRADLEY, M.S., Associate Professor of Nutrition and Health Education, State College, Santa Barbara, California. Completely Revised and Enlarged. The Manual Arts Press, Peoria, Ill. 1942. 224 pages. Cloth. Price $3.50.

The National Formulary. Seventh Edition. Prepared by the Committee on National Formulary. By Authority of the American Pharmaceutical Association. Official from November 1, 1942. Published by the American Pharmaceutical Association, Washington, D. C. 1942. viii-690 pages. Cloth.

The first U. S. Pharmacopoeia had its inception in January, 1817, when Dr. Lyman Spalding of New York City submitted to the Medical Society of the County of New York a proposal for the formation of a National Pharmacopoeia. Since then it has been revised at regular intervals of about ten years, the twelfth revision now being available, and effective from November 1, 1942.

Under existing plans the Pharmacopoeia will be continuously revised as occasion demands and a complete new revision issued every five years. Any changes made during this period, either in the articles already in the Pharmacopoeia or in the form of additions to those already present will be covered by Supplements issued from time to time. The first Supplement has already been issued, making changes in some of the pharmacopoeial monographs due to war conditions. For instance, physicians might already have noticed the difference between Tincture of Green Soap, U. S. P. XI and U. S. P. XII, the difference being due to the use of Oil of Cedar in the place of Oil of Lavender as a perfuming agent.

The U. S. Pharmacopoeias have all been outstanding books. This latest one however, gives evidence of being the best one published. It represents the endeavors of the best medical, pharmaceutical, and chemical experts in this country who have given freely of their talents and time.

The U. S. P. XII omits about 85 medicaments which were official in U. S. P. XI. Among the articles which have been dropped are Vinegar of Squill, Acriflavin, Asafoetida, Cantharides, Brown Mixture, Dover's Powders, and Mass of Mercury. About 160 drug and drug forms have been added. These include Aminoacetic acid, Bentonite, various tablet, capsule and ampule forms of medication, Totaquine, Insulin, Sulfanilamide, and Human plasma.

One of the most important changes made in so far as biologically assayed drugs are concerned is the change from the frog method of assaying digitalis to the cat method. It may be pointed out that the digitalis of U. S. P. XII will be somewhat less active than the digitalis of the U. S. P. XI.

Unfortunately, the U. S. Pharmacopoeia does not form a part of the library of a great many physicians. It can be a very important book to medical men and pharmacists alike and the reviewer recommends that all physicians have readily available a Pharmacopoeia for reference purposes. It contains a surprising amount of useful and accurate information concerning the more important drugs.

H. B. H.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Cole & Puestow—First aid; surgical and medical.
Conel, J. L.—The post-natal development of the human cerebral cortex. vol. 2.
Cowdry, E. V. ed.—Problems of ageing. 2nd edition.
Culbertson, J. T.—Medical parasitology.
Dieuaide, F. R.—Civilian health in wartime.
Dyke & Davidoff—Roentgen treatment of diseases of the nervous system.
Goldstein, K.—After effects of war neuroses.
Homans, G. C.—Fatigue of workers.
Jacobs, M. B.—War gases: their identification and decontamination.
Lambert, S. M.—A Yankee doctor in Paradise.
Langstaff, J. B.—Dr. Bard of Hyde Park.
Lewis, T.—Pain.
Lundy, J. S.—Clinical anesthesia.
McCollum, C. H.—Pills and Proverbs.
Miller, H. R.—Central autonomic regulations in health and disease.
Moritz, A. R.—The pathology of trauma.
Mudd, S.—Blood substitutes and blood transfusion.
Nash, J.—Surgical physiology.
National Research Council. Official military surgical manuals.
vol. 1—Ivy—Plastic and maxillofacial surgery.
vol. 2—Gradle—Ophthalmology and otolaryngology.
vol. 3—Graham—Abdominal and genitourinary injuries.
Regli, A.—The Mayos.
Smith, E. V.—The making of a surgeon.
Stedman's practical medical dictionary. 15th rev. ed.
Vandergrift, G. W.—Castor oil and quinine.
Wangensteen, O.—Intestinal obstructions.
Wise, C. A.—Religion in illness and health.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

M. PIERCE RUCKER, M. D.,
Editor

AGNES V. EDWARDS
Business Manager

PUBLICATION COMMITTEE

M. PIERCE RUCKER, M. D., Richmond, *Chairman*
J. EDWIN WOOD, JR., M. D., University WYNDHAM B. BLANTON, M. D., Richmond.

All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, $2.00. Single Copies 25c.

VOL. 69. DECEMBER, 1942. No. 12

Editorials

Wyndham Bolling Blanton, M.D., Editor Emeritus.

WHEN banks and large corporations want a young and energetic head, they promote the president to the chairmanship of the Board of Directors. In this way they retain the benefits of the wisdom and experience of the old president while at the same time, they gain the advantage of the vigor and energy of the new president. Unfortunately, the VIRGINIA MEDICAL MONTHLY has no such position to offer Dr. Blanton, whose retirement as editor was announced in the November issue. We are happy to announce that Dr. Blanton is still a member of the Publication Committee, and the MONTHLY expects to continue to benefit by his rich scholarship. In the ten years that he has been editor of the MONTHLY, he has served the Medical Society of Virgina well. Under his editorship the VIRGINIA MEDICAL MONTHLY has increased in usefulness and attractiveness until now it is one of the best State journals in this country. It was with real regret that his resignation as editor was accepted.

Dr. Blanton was qualified for the position by both inheritance and training. His father, Dr. Charles Armistead Blanton, has been for years a leader in medical and educational circles in Richmond and in Virginia. Our retiring editor was graduated B.A. at Hampden-Sydney College in 1910, M.A. at the University of Virginia in 1912, and M.D. at the College of Physicians and Surgeons of New York in 1916. He did graduate work at Columbia, Edinburgh and Berlin. In 1918 he married Natalie Friend McFaden. As soon as he began the practice of his profession in Richmond in 1920, he took an active part in the State Society and in the Richmond Academy of Medicine. We remember well one of his early papers, a case report of anthrax contracted from a new shaving brush. His description was so vivid that we were tempted to turn out our whiskers. Mayor Bright, who at that time was a regular attendant of the Academy of Medicine, did grow a Van Dyke shortly afterwards. Besides various other articles in medical magazines, he has contributed to the Dic-

tionary of American Biography; Richmond, Capital of Virginia; Today and Yesterday in the Heart of Virginia. He is the author of that outstanding State medical history, Medicine in Virginia in the Seventeenth Century, Medicine in Virginia in the Eighteenth Century and Medicine in Virginia in the Nineteenth Century. In 1933 Hampden-Sydney conferred upon him the honorary degree of Litt. D.

In the first World War, Dr. Blanton served as a volunteer with Dr. Joseph Blake at the American Ambulance Hospital, Neuilly-sur-Seine, 1915, Captain Medical Corp, U. S. Army, Ft. Benjamin Harrison and Ft. Snelling; Chief of Laboratory Service, Cantonment Hospital, Camp Custer, Mich. 1918-19. His teaching positions at the Medical College of Virginia have included Associate Professor of Medicine and Pro-

WYNDHAM BOLLING BLANTON, M.D.

fessor of the History of Medicine. Since 1939 he has been Professor of Clinical Medicine. He is a trustee of the Union Theological Seminary, Virginia; a Fellow of the American Medical Association and of the American College of Physicians; a member Richmond Academy of Medicine (president in 1929); Virginia Academy of Science; American Association of the History of Medicine; Tri-State Medical Association of the Carolinas and Virginia; Southern Medical Association (just elected vice-president at the 1942 meeting); American Clinical and Climatological Association; Society of Colonial Wars; Society of Cincinnati in Virginia; Pi Kappa Alpha; Phi Chi; Omicron Delta Kappa; Sigma Delta Chi; and Phi Beta Kappa.

Such is our retiring editor. In his last editorial he has outlined his aims and objects for the VIRGINIA MEDICAL MONTHLY. It will be our object to continue these ideals as far as our abilities and the times will permit.

Crawford W. Long and Ether Anesthesia

IN 1942 fell the hundredth anniversary of the first surgical anesthesia. We were interested to see how it was celebrated in various parts of the world. In Atlanta the Theater Guild wrote and put on a play depicting Crawford W. Long and his operation, which was greatly enjoyed by the local profession. (South. Surgeon 11:301, 1942). Dr. Frank Boland writes that the play was produced twice in Atlanta and once in Augusta at the meeting of the Medical Association of Georgia. In London A. D. Marston chose for his presidential address before the section of anesthetics of the Royal Society of Medicine, "The Centenary of the first Anesthetic Use of Ether" (Proc. Roy. Soc. Med. 35:279, 1942). The American Association of the History of Medicine had a paper by Dr. Hugh Young. At the section on the History of Medicine of the Richmond Academy of Medicine, Dr. Lownes Peple described vividly the ether frolics that led up to Long's discovery and the first operation upon Mr. Venable. He also presented Mr. P. A. Wilhite, a grandson of Dr. P. A. Wilhite, who was a pupil of Crawford W. Long, and who called Marion Sims' attention to Long's priority. It was Marion Sims' interest and influence and his article in the VIRGINIA MEDICAL MONTHLY (4; 81, 1877) in 1877, the year before Long's death, that started the movement towards the recognition of Long's great work. Mr. Wilhite gave to the Academy of Medicine some of his grandfather's papers relating to the discovery of anesthesia and some letters from Marion Sims. Hygeia (20:274, 1942) carried an article by Logan Clendening entitled "One Hundred Years of Anesthesia". The Journal of the Medical Association of Georgia carried an article, "The Centennial of the Golden Age of Anesthesia" by J. A. Doherty (31:106, 1942). Pender and Lundy start off their article upon anesthesia in war surgery (War. Med. 2:193, 1942) with "Since the first clinical use of ether as an anesthetic agent in 1842. . . ." Anesthesiology carried a series of exhaustive articles that began in the latter part of 1941 by T. E. Keys upon the development of anesthesia. W. H. Archer has a paper on the discovery of anesthesia in "Anesthesia and Analgia" (21:96, 1942) in which he half-heartedly concedes that Long was the first to make use of anesthesia, but that he had little if any influence upon the development of anesthesia. He quotes the action of the American Dental Association in 1664 to the effect that to Horace Wells, a dentist of Hartford, Connecticut, belongs the credit and honor of the introduction of anesthesia in the United States. He also quotes from the Transactions of the A. M. A. of 1870 "On motion of Dr. H. R. Storer of Massachusetts, it was resolved that the honor of the discovery of practical anesthesia is due to the late Dr. Horace Wells of Connecticut." This rearguard volley from the ranks of the dentists is the only discordant note in the 1942 volumes of praise of Crawford Williamson Long.

Since the appearance of Marion Sims' article in the VIRGINIA MEDICAL MONTHLY in 1877 (4:81, 1877) the growth of Long's fame has been progressive. In 1896 Dr. Hugh Young read a paper before the John Hopkins Hospital Medical Society entitled "Long, the Discoverer of Anesthesia: A Presention of his Original Documents" (Bull. Johns Hopkins Hosp. 8:174, 1897). In 1910 Long's original documents were exhibited at the British Medical Museum in connection with the meeting of the British Medical Association. The same year a monument to Long was unveiled at Jefferson, Georgia. In 1911 Dr. Dudley W. Buxton read a well documented paper before the Section of Anesthetics of the Royal Society of Medicine entitled, "Crawford Williamson Long, (1815-1879): The Pioneer of Anesthesia and the first to suggest and employ Ether inhalation during Surgical Operations." The next year the University of Pennsylvania erected a plaque by Tait McKensie, and on this occasion Jack DaCosta (Selections from the papers and speeches of John Chalmers DaCosta, Philadelphia,

1931) gave an oration that will likely outlast the enduring bronze of McKensie. He says the claims of Long have found able champions in Sir James Paget, Dr. George Foy of Dublin, Dr. Hugh Young, Dr. Isham H. Goss, Dr. Luther Grandy, and Rose Pendleton Chiles. Dr. Francis R. Packard tells the story very impartially in his admirable "History of Medicine in the United States." In 1921 a monument to him was erected on the grounds of the University of Georgia at Athens, and in 1926 a shaft was erected at Danielsville, Georgia, his birthplace. It was also in 1926 that a marble statue of him as the first favored son of the State of Georgia was placed in Statuary Hall of the United States Capitol. In 1936 a handsome monument in Danielsville was unveiled, and the building in which the first operation under anesthesia was performed was marked with a suitable tablet.

The notorious ether controversy in the Congress of the United States lasted for years and the Congress reached no decision. Recently, the United States Government has recognized Long as the discoverer of anesthesia and has issued a postage stamp in his honor. The address of the Postmaster General James A. Farley at Jefferson, Georgia, when the stamp was put on sale, April 8, 1940, can be found in the Journal of the Medical Association of Georgia. (Aug. 1940). Illustrations of the various statues, monuments, and tablets in honor of Dr. Long, as well as portraits of many persons who were associated with him and his discovery, can be found in Dr. Young's excellent paper. (Bull. Hist. Med. 12:191, 1942.)

President's Message

I am pleased to have this opportunity to express to the profession in the State my sincere gratitude for the honor which has been conferred upon me. The Medical Society of Virginia has a long and distinctive history with a fine record of achievement as a result of the efforts of its membership. The honor of being President of this Society is a valued culmination of my professional ambition. You may be sure that I shall carry out to the best of my ability the mandates of our profession during the period of my incumbency. I am acutely aware of my own limitations, but I am consoled to feel that I shall have available to me the advice and guidance of the whole profession in Virginia during these troublesome times. With a common interest we shall jointly meet the issues as they arise this year.

During this period of our active attention to military matters many of our medical societies have cancelled their meetings and during the coming year other groups will probably plan not to have their annual meetings until the National Emergency is passed. Such a general cancellation of medical societies is, I think, justified, but we all hope that this curtailment of organized medical effort will be short lived. In view of the fact that many of our national and special societies will not meet during the coming year, I think an even greater responsibility rests upon our State Society to carry on during this period with a renewed vigor. It is probable that we can get sufficient transportation to get to our annual meeting place without too much difficulty. Organized medicine will function more satisfactorily if the doctors in our State can meet in a body and discuss their problems. The opinion that our Society should have an annual meeting next year was abundantly expressed at the recent meeting of the House of Delegates of the Medical Society of Virginia.

Strong special and standing committees have been appointed for the year's work. I hope that these committeemen will devote the same time and effort to their committee work as has characterized their efforts in the past. It is very regrettable that the Chairmen of two of our important committees feel that they could not continue with their chairmanships, namely, Dr. Wyndham Blanton, Chairman of the Committee on Publication and Program, and Dr. Dean Cole, Chairman of the Legislative Committee.

Dr. Blanton has devoted a material effort in the publication of our journal for many years. The results of his work may be evaluated when one considers that our journal has a distinctive place with the best State journals in our country. This fine accomplishment is largely due to the intelligent and interested work which Dr. Blanton has manifested in our publication. Dr. Blanton will remain on the Committee to lend his assistance to our new editor, Dr. M. Pierce Rucker. I am sure that you will agree with me in my conviction that Dr. Rucker is adequately able to carry on our fine publication in its high state of efficiency. The medical profession in Virginia is aware of Dr. Rucker's scientific interest in medicine and the great contributions which he has made in his special field of obstetrics.

In the retirement of Dr. Dean Cole, as Chairman of the Legislative Committee, our Society has sustained a real loss. Dr. Cole has fought the battles of organized medicine in the State with determination, intelligence and perseverance. It is true that he has not won all of his battles, but certainly he has left a definite impression of our interest with the members of the Legislature. Any of these failures may be attributed to the lack of assistance given Dr. Cole by our profession. The work of the new Chairman of the Legislative Committee will be made easier as a result of Dr. Cole's fine efforts. The new Chairman of the Legislative Committee, Dr. Frank S. Johns, is wonderfully equipped to represent our interest in legislative matters. He will approach his problems with a planned program, intelligence and the fine degree of determination that has characterized his entire professional career. Dr. Johns will need the support of the entire membership of our Society during the coming year. Please remember when his call is made upon you that he is asking your help in the interest of organized medicine. Your response will be an evidence of your support of the profession in our State and your duty to the members of our profession who are away in military service. One of the obligations which we owe these men who have gone into the military service is to continue the high principles of the practice of medicine in Virginia so that when they return to us they will find the practice of medicine unchanged in our State.

J. M. EMMETT, M.D., *President,*
Medical Society of Virginia.

The following are committees appointed by Dr. Emmett.

Standing Committees

(The numbers after names indicate length of term of office, as the By-Laws provide that new members of Standing Committees shall be named by the incoming President for terms of three years, except in the case of the Department of Clinical and Medical Education.)

PUBLICATION AND PROGRAM: M. P. Rucker, M.D. (3), Richmond, *Chairman;* J. Edwin Wood, Jr., M.D. (2), Charlottesville; Wyndham B. Blanton, M.D. (1), Richmond.

SCIENTIFIC EXHIBITS AND CLINICS: W. Ambrose McGee, M.D. (2), Richmond, *Chairman;* M. J. Dreyfuss, M.D. (3), Clifton Forge; W. W. S. Butler, M.D. (1), Roanoke.

DEPARTMENT OF CLINICAL AND MEDICAL EDUCATION: Roshier W. Miller, M.D., Richmond, *Chairman;* Mr. George B. Zehmer, Charlottesville, *Executive Secretary;* I. C. Riggin, M.D., Richmond, *State Health Commissioner;* Lee E. Sutton, M.D., Richmond, Medical College of Virginia; H. B. Mulholland, M.D., Charlottesville, University of Virginia; J. W. Preston, M.D., Roanoke; Noland M. Canter. M.D., Harrisonburg.

LEGISLATION: Frank S. Johns, M.D. (3), Richmond, *Chairman;* G. Colbert Tyler, M.D. (3), Newport News; J. Morrison Hutcheson, M.D. (3), Richmond; C. D. Nofsinger, M.D. (2), Roanoke; B. F. Eckles, M.D. (2), Galax; James P. King, M.D. (2), Radford; Dean B. Cole, M.D. (1), Richmond; W. D. Kendig, M.D. (1), Kenbridge; Alex. F. Robertson, M.D. (1), Staunton.

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Societies

Medical Examining Board of Virginia.

At the meeting of the Board, held in Richmond, June 17-20, the following applicants were granted certificates to practice medicine in Virginia:

Dr. Samuel Thompson Adams, The Plains.
Dr. Hyman Hertzel Addlestone, Charleston, S. C.
Dr. Trogler Francis Adkins, Winchester.
Dr. Robert James Allen, Chattanooga, Tenn.
Dr. Thomas Blakely S. Baer, Huntington, W. Va.
Dr. William Ryland Bailey, Jr., Norfolk.
Dr. Wallace Edgar Baker, Petersburg.
Dr. Vincent Barber, Virginia Beach.
Dr. Maxwell Rufus Berry, Jr., Richmond.
Dr. Alfred Rives Berkeley, Jr., Charlottesville.
Dr. Henry A. Bonynge, Gordonsville.
Dr. Robert Lee Brickhouse, Norfolk.
Dr. Louis Percival Britt, Charlottesville.
Dr. George Kirby Brooks, Jr., Canal Zone, Panama.
Dr. James Marion Bryant, Philadelphia, Pa.
Dr. Lester James Buis, Richmond.
Dr. Lloyd Byron Burk, Jr., Seattle, Wash.
Dr. Carolina J. Buttrick, Hampton.
Dr. William Edward Byrd, University.
Dr. Eugene Mead Caffey, Jr., Charlottesville.
Dr. Malcolm Campbell, Abingdon.
Dr. Daniel Parker Card, Lexington.
Dr. James Walter Choate, Jr., Norfolk.
Dr. Eric Rudolph Clarke, Richmond.
Dr. Lintner Earl Clark, Charleston, S. C.
Dr. Jesse Newton Clore, Jr., Charleston, S. C.
Dr. Barnett Herman Cooper, Dante.
Dr. William Foscue Cox, Winston-Salem, N. C.
Dr. Joseph Wentworth Coxe, III, Roanoke.
Dr. Horace Emerson Cromer, Charlottesville.
Dr. William Grant Crook, Philadelphia, Pa.
Dr. James Edwin Cross, Charlottesville.
Dr. Edgar Lee Crumpacker, Roanoke.
Dr. A. J. Crutchfield, University.
Dr. Hiram Wilson Davis, Williamsburg.
Dr. Pauline Nichols Davis, Richmond.
Dr. William Ashby Davis, Agricola.
Dr. Gerald Fisk Dederick, Jr., Richmond.
Dr. Richard Laurens DeSaussure, Charlottesville.

Dr. Henry Price Deyerle, Harrisonburg.
Dr. Monroe Thomas Diamond, New York, N. Y.
Dr. Martin Donelson, Jr., Charlottesville.
Dr. Herbert Grasty Dickie, Jr., Charlottesville.
Dr. James William Dickie, Roseland.
Dr. Adolph Edward Drexel, Richmond.
Dr. Charles Robert DuGan, Philadelphia, Pa.
Dr. Robert George Dunn, Jr., Richmond.
Dr. Alexander Dworsky, Brooklyn, N. Y.
Dr. Edward Jones Evans, Huntington, W. Va.
Dr. Everett Idris Evans, Richmond.
Dr. George Edward Ewart, Richmond.
Dr. Clarence Clayton Fabric, Radford.
Dr. Harry Edwin Farver, Charlottesville.
Dr. Douglass Durston Fear, Roanoke.
Dr. Russell Sylvester Fisher, Detroit, Mich.
Dr. Glenn Taylor Foust, Jr., Charlottesville.
Dr. Charles Gabriel Fox, Jr., Louisville, Ky.
Dr. Everett Lyle Gage, Bluefield, W. Va.
Dr. David Hoge Gatherum, Madison, Wis.
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Dr. Donald Roscoe Gilbert, Richmond.
Dr. Norman Ambrose Gililland, Alexandria.
Dr. Eugene Oscar Goldstein, Hampton.
Dr. Conrad Ludwig Gossels, Norfolk.
Dr. Bernard Gottfried, Brooklyn, N. Y.
Dr. Fred Chiles Green, Lawrenceville.
Dr. William Franklin Grigg, Jr., Washington, D. C.
Dr. John Moir Hall, Ann Arbor, Mich.
Dr. William Elgin Harman, Charlottesville.
Dr. Ernell Annie C. Harris, Franklin.
Dr. Chapin Hawley, Cincinnati, Ohio.
Dr. John Chrisman Hawk, Jr., University.
Dr. Ormond Lee Haynes, Wheeling, W. Va.
Dr. Edmund McKeill Henderson, Bridgewater.
Dr. Edward Watts Hickson, Dante.
Dr. William H. Higgins, III, Richmond.
Dr. Haywood Northrop Hill, Richmond.
Dr. William Wyatt Hoback, Roanoke.
Dr. Julius Herman Hopkins, Petersburg.
Dr. Jacob Samuel Huffman, Roanoke.
Dr. Jethro Hurt Irby, Jr., Richmond.
Dr. Hunter Sheppard Jackson, Richmond
Dr. Clara Czacskes Joel, Richmond.
Dr. Joseph Ralph Kallet, Richmond.
Dr. Leslie Kay, Norfolk.
Dr. Amy Louise Kuhn, Arlington.
Dr. Claude Smith Lawson, Jr., Richmond.
Dr. Hans Lent, Richmond.
Dr. Augustine Warner Lewis, Richmond.
Dr. Donald Wayne Linck, University.
Dr. Leon Linder, Clifton Forge.
Dr. John Kellam Lingo, Pungoteague.
Dr. Ansel Lipman, New York, N. Y.
Dr. Preston Lowrance, Charlottesville.
Dr. Albert Slocomb MacMillan, Charlottesville.
Dr. Archibald Rich MacPherson, Arlington.
Dr. Betty Allen Magruder, Charlottesville.
Dr. Charles Adley Mangham, Washington, D. C.
Dr. David Vye Mann, Randolph, Mass.
Dr. Frederick Dewitt Maphis, Jr., Richmond.
Dr. Maxwell Jerome Marder, Bayonne, N. J.
Dr. Berkeley Hancock Martin, Jr., Norfolk.
Dr. John William Massey, Jr., Richmond.
*Dr. James Miree, Jr., Washington, D. C.
Dr. Donald Carruth McCollum, Arlington.
Dr. Anabel Shawkey McConnell, Gate City.
Dr. Jeannette Shute McConnell, Philadelphia, Pa.
Dr. Edward Prince McCreery, Jr., Hinton, W. Va.
Dr. John Samuel McFall, Huntington, W. Va.
Dr. Walter Jones McLendon, Roanoke.
Dr. Herman Arnold Meyersburg, Charlottesville.
Dr. Clifford Devere Miller, Charleston, S. C.
Dr. Ralph Bretney Miller, Alexandria.
Dr. Robert Hartwell Mitchell, Radford.
Dr. Mervin Hur Mitchell, Roanoke.
Dr. Herbert Heinrich Neisser, Brockport, N. Y.
Dr. William Henry Nicholson, Elkton.
Dr. John Wendell Oats, III, Philadelphia, Pa.
Dr. John Teaford Obenschain, Staunton.
Dr. William Earl Overcash, Roanoke.
Dr. Franklin L. Overton, Jr., Richmond.
Dr. Victor Page Owen, Richmond.
Dr. Carl Putnam Parker, Jr., Richmond.
Dr. Edwin Pearson Parker, III, Cincinnati, Ohio.
Dr. Seymour George Pelzer, Clinchco.
Dr. Kemp Plummer, Richmond.
Dr. Leonard David Policoff, Richmond.
Dr. Drake Pritchett, Danville.
Dr. Constantine N. Psimas, Portsmouth.
Dr. Oscar Lee Ramsey, Jr., Charleston, W. Va.
Dr. Barnie Murl Reagan, Calvin.
Dr. Duvahl Boone Ridgway, Roanoke.
Dr. Harry Charles Robelen, Jr., Richmond.
Dr. Walker Reynolds, Jr., Fairfield, Ala.
Dr. Catherine Mary Roth, Charleston, W. Va.
Dr. Richard Larcombe Schley, Jr., Savannah, Ga.
Dr. Ernst Schweiger, Portsmouth.
Dr. Sergei A. Serikoff, Roanoke.
Dr. William Hamilton Shafer, Charlottesville.
Dr. Thomas Berkeley Smith, Ashland.
Dr. Robert Richard Stanley, Atlanta, Ga.
Dr. Richard G. Stoneburner, Richmond.
Dr. Evelyn Louise Stull, Wilkes-Barre, Pa.
Dr. William Nathaniel Thomas, Jr., Annapolis, Md.
Dr. James Albert Thompson, Jr., Madison, Wis.
Dr. James Arthur Thweatt, Petersburg.
Dr. Frank Blaine Truesdell, Richmond.
Dr. Weir Mitchell Tucker, Richmond.
Dr. Amelia V. Tutles, Farmville.
Dr. Herbert Edward Valentine, Jr., Emory University.
Dr. John Alden Vann, Norfolk.
Dr. Maurice Sidney Vitsky, Washington, D. C.
Dr. William Watkins Walton, Norfolk.
Dr. Oscar Wilde Ward, Jr., Richmond.
Dr. Herbert Fariss Webb, Richmond.
Dr. Frederick Dashiell White, Charlottesville.
Dr. David Calloway Whitehead, Norfolk.
Dr. Joseph L. Wilkerson, Durham, N. C.

*Certificate withheld pending completion of credentials.

Dr. John Franklin Williams, Richmond.
Dr. Mervin Bowman Wine, Harrisonburg.
Dr. Reuben Franklin Wohlford, Roanoke.
Dr. Henry Wise Wood, Jr., Atlanta, Ga.
Dr. Frederick Ray Woodward, Los Angeles, Calif.
Dr. Leonard Jerome Yamshon, Haysi.
Dr. Charles Augustus Young, Jr., Norfolk.
Dr. Seymour Zaller, Hampton.
Dr. Nathan I. Zavadier, Richmond.
Dr. Arnold Milton Zetlin, Norfolk.
Dr. Isaac Myers Zigler, Broadway.
Dr. Walter Raymond Talmage, Petersburg (Homeopath).

James River Medical Society.

Officers of this Society for 1943 were recently elected as follows: President, Dr. J. H. Yeatman, Fork Union; vice-president, Dr. O. L. Huffman, Arvonia; and secretary, Dr. Garland Dyches (re-elected), Dillwyn.

The Clinch Valley and Wise County Medical Societies

Met on November 6th at Norton, with an attendance of about 45 members and several visiting physicians. Following a Dutch dinner, the societies were addressed by Dr. Herbert Acuff of St Mary's Hospital, Knoxville, Tenn., his subject being "The Diagnosis and Management of Upper Abdominal Conditions". Dr. C. B. Bowyer, Stonega, president-elect of the Medical Society of Virginia, acted as chairman of the meeting, and the program was arranged by the Wise County Society officers.

Rockingham County Medical Society.

At a recent meeting, the following officers were elected: President, Dr. H. Grant Preston, Harrisonburg; vice-president, Dr. B. W. Nash, Timberville; and secretary-treasurer, Dr. Thomas Scarlett, re-elected, Harrisonburg. This society meets the second Monday in November, February, May and August at the Rockingham Memorial Hospital in Harrisonburg.

Albemarle County Medical Society.

Dr. M. K. Humphries, Jr., Charlottesville, has been elected as secretary-treasurer to fill the unexpired term of Dr. E. W. Kirby, Jr., who is now in the U. S. Army. At a recent meeting, Drs. Robert T. Rutherford, Jr., and Lyle J. Hansbrough, both of the University, were elected to membership.

Norfolk County Medical Society.

At the meeting of this Society on November 16th, the program was presented by the hospital staff of the Marine Hospital, and the following papers presented: Some Aspects of Cardiac Infection by Dr. Leo Waitzkin; and Primary Atypical Bronchial Pneumonia by Dr. R. H. Smith.

Due to the fact that so many members of this Society have entered the Services, and those left do not have as much time at their disposal as they have had in the past, there will be only two meetings a month, these being on the 1st and 3rd Mondays. The first will be the usual business session, and the second will be for discussion of such medical matters as may be presented by selected speakers.

The Roanoke Academy of Medicine

Held its first regular monthly meeting on November 2nd. The following program was presented: Battle Casualties on the Home Front by Dr. Paul Davis; The Value of Fluids in Infancy and Childhood by Dr. Roger DuBose; and Virus Pneumonia and Its Treatment by Dr. John Giesen, invited guest of Radford.

New members taken in at this meeting are Drs. M. Marie Thomas, Albert G. Schnurman, and Douglass D. Fear.

Dr. Paul Davis is president of the Academy and Dr. Ruth Barnhart, secretary-treasurer.

The Hopewell Medical Association

Has re-elected its present officers for another year as follows; President, Dr. A. T. Brickhouse; vice-president, Dr. Oliver L. Jones; and secretary-treasurer, Dr. W. M. Phipps.

News

Buy Christmas Seals!

Help prevent a war time rise in tuberculosis by buying Christmas seals. Make them part of your Christmas giving.

Southern Medical Association,

At the meeting of this Association held in Richmond, November 10-12, there were approximately 1,400 doctors registered, with a total registration of

ladies, students, nurses, exhibitors, etc., of about 2,500. Dr. Harvey F. Garrison, Jackson, Miss., succeeded Dr. M. Pinson Neal to the presidency, and the following were elected: president-elect, Dr. W. T. Wootton, Hot Springs, Ark.; vice-president, Dr. Wyndham B. Blanton, Richmond; chairman of Board of Trustees, Dr. F. K. Boland, Atlanta, Ga.; and chairman of the Council, Dr. Lucien A. LeDoux, New Orleans, La. Mr. C. P. Loranz, Birmingham, Ala., is secretary-manager.

The executive committee of the Council, at its meeting in the late spring of next year, will decide on the place for the meeting in November 1943.

News From Medical College of Virginia.

Dr. Harvey B. Haag, professor of pharmacology, spoke before the staff of the George Washington University medical school on Facts about Tobacco Smoke of Interest to Physicians, October 29.

Dr. Porter P. Vinson, professor of bronchoscopy, esophagoscopy, and gastroscopy, addressed the International Medical Assembly of the Inter-State Postgraduate Medical Association of North America at Chicago, Ill., on October 30, on The Diagnosis and Treatment of Pulmonary Abscess.

Dr. I. A. Bigger, professor of surgery, recently gave two lectures before the Oklahoma City Clinical Society on Penetrating Wounds of the Thorax and Wounds of the Major Peripheral Vessels.

Dr. William B. Porter, professor of medicine, on November 4, participated in a refresher course in medicine at the Medical College of South Carolina, giving a paper on Cardio-Diaphragmatic Syndrome, taking part in a discussion of the various aspects of cardio-vascular disease and in a clinical-pathological conference.

The college has received a grant of $8,400 from the Office of Scientific Production and Research of the United States government for the continuation of research on shock, which is being done by Dr. E. I. Evans, assistant professor of surgery.

The veterans of Base Hospital 45, World War I, had as guests the present college unit, General Hospital 45, in Armistice Day exercises on November 11 at the Monumental Church at 12:00 noon. Dr. W. Lowndes Peple, representing Dr. Stuart McGuire, honorary commander of Base Hospital 45 Association, spoke briefly. The principal address was given by Colonel Fred Rankin, Medical Corps, United States Army. Following the exercises a luncheon was given by the college.

During the sessions of the Southern Medical Association in Richmond, November 10-12, many of the faculty of the college participated in programs, exhibits, and discussions. Many physicians attending the meeting were college visitors while in Richmond. Dr. J. C. Forbes, associate professor of biochemistry, and Dr. E. I. Evans, assistant professor of surgery, received honorable mention for their exhibits on Protective Action of Sulfanilimide Against Certain Liver Poisons, and Mrs. Louise Jones, instructor in anatomy, received a scientific award for her exhibit of gross anatomy of presacral and facial nerves.

News from University of Virginia, Department of Medicine.

Two gifts by anonymous donors have recently been made to the William James Rucker Convalescent Home for Children, one of $750 and another of $200.

Dr. H. E. Jordan and Dr. E. P. Lehman attended the annual meeting of the Association of American Medical Colleges in Louisville on October 26 to 28. Dr. Lehman made a report as Chairman of the Association's Committee on "The Teaching of Military Medicine".

Dr. C. C. Speidel, Professor of Anatomy, was awarded an honorary degree of Doctor of Science by his alma mater, Lafayette College, at the Founders' Day Exercises on October 23.

On Monday, October 19, Dr. C. P. Rhoads of Memorial Hospital in New York gave the third annual lecture of the Alpha Eta Chapter of Phi Beta Pi. He spoke on "Diet and Experimental Cancer Production".

On Monday, October 26, a motion picture of "The Biological and Clinical Activity of the Adrenal Cortex" was presented by the Upjohn Company in the Amphitheater.

Married.

Dr. Edwin C. Bryce, II, and Miss Helen Anne Cox, both of Richmond, November 10th. Dr. Bryce is a graduate of the Medical College of Virginia, class of 1938.

Lt. Claude Marshall Lee, Jr., MC., USNR., Richmond, and Miss Sibyl Elizabeth Scribner, Honolulu, November 7th. Dr. Lee received his medical degree from the University of Virginia in 1935.

Dr. Marion Lawrence White, Jr., and Miss Emma Cassandra White, both of University, November 21st. Dr. White graduated from the University of Virginia in 1937.

Dr. J. M. Bishop,

Roanoke, who reported to the Norfolk Naval Hospital, Portsmouth, in September, and was commissioned Lieutenant Commander, has been released from duty and has re-opened his office and resumed the practice of pediatrics.

Dr. E. G. Gill,

Roanoke, was elected vice-chairman of the section of ophthalmology and otolaryngology at the recent meeting of the Southern Medical Association.

Dr. Powell G. Dillard,

Lynchburg, has been appointed as City School Doctor to succeed Dr. J. Paulett Clark who died recently.

Dr. Guy Hinsdale,

Formerly Medical Director of the Greenbrier Hotel, White Sulphur Springs, is now located in Lewisburg, W. Va.

"The Greenbrier" Has New Name.

The Greenbrier Hotel at White Sulphur Springs, W. Va., which has recently been taken over by the Army as a General Hospital, has been named in honor of the late Colonel Percy M. Ashburn, Medical Corps, first Commandant of the Medical Field Service School at Carlisle Barracks, Pa.

Wanted.

Used short wave diathermy machine. Must be late model, in perfect condition, and reasonably priced. Full particulars. Dr. T. H. Massey, Smithfield, Va. *(Adv.)*

Wanted.

Position by Virginia licensed physician, draft exempt. Prefer industrial or institutional practice. Able-bodied, single, experienced. Write "Doctor", care this journal. *(Adv.)*

Obituaries

Dr. Achilles Douglas Tyree,

Clifton Forge, died November 12th, at the age of fifty-two. He was a graduate of the Medical College of Virginia in 1911 and had practiced at several places before locating at Clifton Forge in 1923. Dr. Tyree was a member of the Medical Society of Virginia. His wife and a daughter survive him.

Dr. John Paulett Clark,

Well known physician of Lynchburg, died November 9th. He was seventy-two years of age and a graduate in medicine of the University of Virginia in 1896. Dr. Clark had served as school physician for Lynchburg since 1918. He had been a member of the Medical Society of Virginia for forty-five years.

Dr. Amos DeRussia Wood,

Bluefield, W. Va., died September 14th. He was a native of Floyd County, Va., and seventy-three years of age. Dr. Wood graduated from the College of Physicians and Surgeons, Baltimore, in 1893. He had been a member of the Medical Society of Virginia for forty-seven years.

Dr. Horton Ryan Casparis,

President of the Tennessee Tuberculosis Association and professor of Pediatrics at Vanderbilt University, Nashville, Tennessee, died of a heart attack on November 11th in Richmond while attending the meeting of the Southern Medical Association.

Dr. William Northam Trader,

Sonyea, N. Y., died October 11th, at the age of sixty-five. He was a graduate of the University of Virginia, Department of Medicine, in 1904.

Dr. Robert White Knox,

Houston, Texas, died September 27th. He was eighty-two years of age and a graduate in medicine from the University of Virginia in 1882. Dr. Knox was a past president of the State Medical Association of Texas.

Destruction of barracks at Wheeler Field, T. H., December 7, 1941.
Photo by U. S. Army Signal Corps.

Lessons from Pearl Harbor

Out of the chaos and confusion—the burns, lacerated wounds and compound fractures—that was Pearl Harbor on that first Sunday of December, 1941 — have come many lessons. Not the least among them is the value of the sulfonamides—used topically for the management of the potentially infected traumata.

Field conditions were ideal for the production of Clostridial infections—yet the incidence of gas gangrene was remarkably low and resulted in no deaths. Hospital facilities and surgical skill were hard-pressed and surgical operations were delayed from hours to days. Due in no small measure to the use of the sulfonamides, postoperative mortality was only 3.8 per cent, and most of these fatalities were from shock and hemorrhage.

Topical use of sulfonamides is assuming increasing importance not alone in military practice but in industry and civil life. These compounds should be regarded as an important adjunct to surgery, regardless of whether the surgeon is dealing with grossly contaminated wounds or maintaining asepsis in his operative field. Further studies must, of course, be made to determine the method of application best suited for each type of wound.

The Squibb Laboratories have available many of the sulfonamide compounds. There are several dosage forms under laboratory and clinical investigation and these will be provided as the need arises and results prove favorable.

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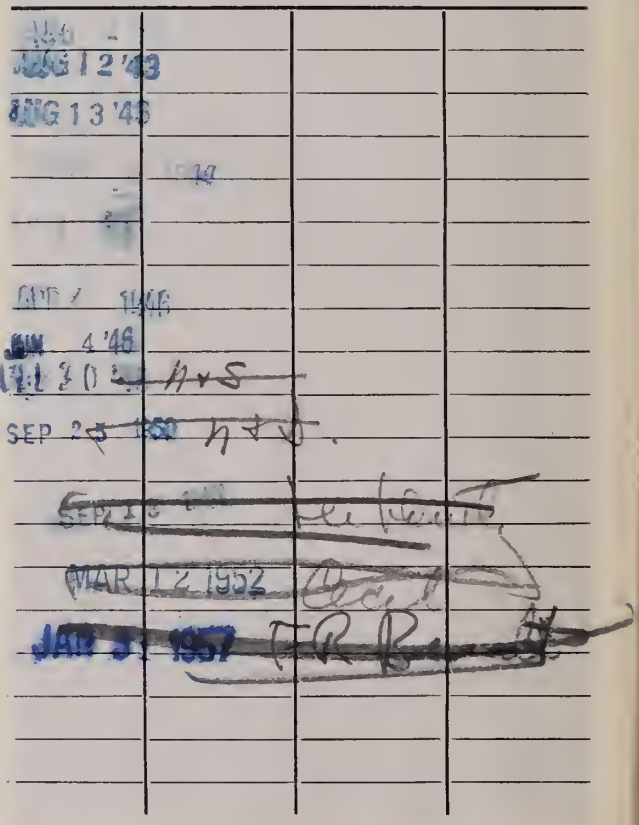
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